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ABSTRACT

The California Workforce Literacy Task Force conducted studies and surveyed existing literature to determine the status of literacy and other basic skills in the state's work force. The results are reported with a series of recommendations for a broad-based state strategy to improve worker productivity through better educational opportunities. Ten areas of need are identified, and the task force findings and specific action recommendations are presented for each. The need areas include: (1) a master plan for the education and training of non-college-bound youth and adults; (2) adequate funding of the delivery system for adult literacy education and training; (3) incentives to increase workplace education and learning; (4) education and training in the public sector; (5) skills in English language and literacy as a priority for adult education and training; (6) use of technology to enhance adult learning; (7) work force education in the transition from school to work; (8) breaking the cycles of marginal literacy and marginal living; (9) professionalism and research-based knowledge in work force education and training; and (10) increased awareness about the literacy, education, and training needs of underserved youth and adults. (MSE) (Adjunct ERIC Clearinghouse on Literacy Education)

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Report of the
California Workforce Literacy Task Force

November 1990

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Report of the
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Executive Summary

Productivity at work is the engine for economic growth, and literacy is the fuel that drives that engine. In an increasingly competitive international and national economy, California can no longer afford to underinvest in the skills development of that half of its adult citizens who are out-of-school but typically not college bound. These adults are likely to be below average in the skills of language, literacy, mathematics, reasoning, and problem solving, and for these reasons they are likely to be less productive than their more accomplished workmates.

Increasing the productivity of California's workforce for the 21st century is the most important economic and social problem facing the state today.

To meet the challenging needs of the State's present and future workforce, the Task Force strongly recommends that California's Legislature and Governor work together to

promote awareness **of the serious need facing the State for greater investments in the literacy skills development of our underserved youth and adult human resources;**

provide leadership **to state government agencies, business and industry, community groups, and families to improve the education of underserved, traditionally non-college bound youth and adults; and**

produce a master plan **for the workforce education and training of California's underserved youth and adults that addresses in an integrated manner the needs of the present adult workforce, the needs of youth transitioning from school to work, and the needs of pre-school and primary grades children for well educated parents who can prepare and assist them to be successful in school.**

A Life-Cycle, Intergenerational Perspective

The Task Force approaches the improvement of workforce literacy and other skills for the next century with the understanding that a "quick-fix" will not work. Instead, an approach is needed that takes a long term view of the life cycle.Thus, our recommendations deal with (1) the current workforce of youth and adults who constitute three-quarters of the workforce of the year 2000; (2) teenagers who may be considering dropping out of school to enter the workforce, who may become teen parents, or who leave school intending to go directly into the world of work and do not anticipate going to college; and (3) pre-school and primary grade school children who will comprise the workforce of a generation from now.

The best "head start" for a child starts with the head of the family. A well educated parent is the best educational "intervention program" for a child.

While the Task Force is not concerned with public school reform *per se*, our recommendations are premised on the belief that the best "reform program" for children is a well-educated parent or other caregiver. From this point of view, an investment in the education of adults can produce "double duty dollars" by improving the education of adults and the educability of their children. In this way, both the productivity of the workplace and the productivity of the public schools may be increased.

Findings and Recommendations of the Task Force

The Task Force recommendations are based on a number of findings from studies by Task Force members, papers contributed to the Task Force by State government agencies and concerned citizens, and from studies of hundreds of national reports, research papers, and policy analyses by the Task Force staff. They are based on the belief that problems of workforce literacy and other intellectual skills development will be overcome by a strategy that simultaneously deals with the present workforce of adults, the emerging workforce of youth leaving school, and the future workforce of children entering and participating in primary school.

Need For A Master Plan for the Education and Training of Non-College Bound Youth and Adults

Findings:

Over 40% of California's applicants for military service in fiscal year 1989 scored at the 8th grade level or below in literacy.

More than half of California's youth and adults are not seeking higher education.

An estimated seven million of California's youth and adults age fifteen and older have educationally developed skills below the ninth grade level, and many are in need of English language training.

State provided literacy programs cannot meet the present demands for services, yet a majority of those who could benefit from additional education are not being reached, and of those who are served most drop out without increasing their skills to the ninth grade level.

There are over a thousand adult education and training program providers now operating in California in an uncoordinated and underevaluated manner.

Unlike the Master Plan for Higher Education, there is no Master Plan for the education of non-college bound youth and adults in California that integrates the roles of government agencies; businesses and industries; workers unions; community-based organizations; library related services and the formal secondary and postsecondary institutions.

<u>Recommendation 1</u>: That the Legislature, in conjunction with the Governor, appoint a Commission, for a term of five years, to prepare a Master Plan for Workforce Education and Training of California's non-college bound youth and adults.

The Master Plan should establish the foundation for the Governor and the Legislature to formulate effective policies and programs for lifelong education and training of California's non-college bound youth and adults well into the 21st Century.

The Master Plan should integrate the roles of local, state and federal agencies, businesses and industries, labor, community-based organizations, public library services and the formal secondary and post-secondary educational institutions. In developing the Master Plan, the Commission should take into consideration any existing formal plans and programs of state agency providers. The following recommendations of the Task Force should be incorporated into the plan.

Need to Adequately Fund the Delivery System for Adult Literacy Education and Training

Findings:

Most of the population in need of literacy and other cognitive skills development are not being reached and served by the current delivery system. Limited funds lead to many being turned away from programs. Among the reasons given for non-participation are failure to recognize a skills problem, fear of admitting a literacy problem at work, or embarassment. The demands of work and family may create barriers to participation. Negative attitudes about classroom learning, times and locations for learning are often reported. The perceived lack of any rewards or benefits offer little incentive for many in need of improving their skills.

In 1987, some 1100 literacy programs served less than one in seven of the millions of youth and adults who read below the ninth grade level. Most left without achieving ninth grade skills.

Current state policies limit the funding for adult education and restrict the opportunities for non-college bound youth and adults to obtain education and training.

<u>Recommendation 2</u>: That the Legislature remove the prohibition against offering of adult education by communities that now cannot do so because they did not have programs in place before Proposition 13; further that the Legislature provide additional funding for adult English-as-a-Second Language (ESL) and basic skills programs to realistically reflect the need for these services.

Need for Incentives to Increase Workplace Education and Learning

Findings:

Of 500 applicants for work in a major defense contracting firm in San Diego, one in four read below the ninth grade level.

The current adult education system does not include significant involvement of business and industry in workforce education and training for non-college bound youth and adults, yet the workplace is where most of those in need are found.

Most California businesses provide few educational opportunities for workers below the management level.

Many businesses and industries in California are now employing workers whose skills are below the ninth grade level and whose productivity is not as great as it should be.

Many workers unions have members in need of additional training in job skills and intellectual skills developed through education (reading, writing, arithmetic, reasoning, problem solving).

Recommendation 3: That the Legislature adopt policies providing incentives for California employers, above a certain level of employment, to invest a minimum of one percent of employee payroll to establish a formal program of education and training of non-management employees.

In the case of small and medium sized businesses, where it is not feasible to establish individual programs, a training consortium might be formed. Included in employer training could be pre- or post-employment training of deficient job applicants to raise their basic skills to acceptable levels.

Need for Education and Training In The Public Sector

Findings:

State and local government agencies in California have failed to recognize and address the need for workforce education and training in public sector work-settings.

The State, by its leadership and example, should encourage all local governmental agencies to adopt a system of education and training for their own workforce.

Recommendation 4: That the Legislature and the Governor adopt policies to establish a system of basic skills training in state government to permit job applicants with basic skills deficiencies to qualify for entry level work, and provide continuing education to permit underqualified employees to attain the skills needed to move upward.

Need for Skills in English Language and Literacy: A California Priority for Adult Education and Training

Findings:

Many adult literacy learners in California's workplaces feel discriminated against for speaking a language other than English, and they are reluctant to attend language and literacy classes for fear of reprisals by employers.

By the year 2000, one in three of California's working age population will be Latino or Asian.

Educators have not adequately determined the problems and effects of proficiency in a native language in the learning of English-as-a-Second Language.

Recommendation 5: That the Legislature and Governor develop policies of non-discrimination against non-English speakers and non-literates in the workplace and further that they provide for research to further guide state policies regarding the development of English literacy among limited-English proficient adults, with attention to the effectiveness of native language literacy instruction on second language learning.

Need to Use Technology To Enhance Adult Learning

Findings:

California has failed to capitalize on the use of technology in adult education and training that could cost-effectively expand the capacity of the literacy delivery system.

Many workplace literacy programs find that the use of computers motivates employees to participate in programs.

Recommendation 6: That the Legislature incorporate the development and use of technology for adult workforce education into any State policies and legislation on the use of educational technology in California's education system.

Need for Workforce Education in the Transition From School To Work

Findings:

California does not have a well articulated education program to assist in the transition from school to work for non-college bound youth.

Many non-college bound youth and adults who do not have a high school diploma or the equivalent cannot take advantage of California's apprenticeship program.

Recommendation 7: That the Legislature direct the Commission on the Master Plan for Workforce Education and Training to develop policies to increase the effectiveness of the transition from school to work by expanding the State's apprenticeship program.

Need to Break The Cycles Of Marginal Literacy and Marginal Living

Findings:

Infants born into richly nourishing cultures of literacy, in homes where there are literate parents who use their literacy extensively, tend to grow literate to a large extent even before entering primary school.

Children's educational achievement in school is directly related to their parent's, and especially mother's, education level.

Studies of pre-school and primary school compensatory education programs repeatedly emphasize the importance of parental involvement for the success of programs.

In California, more money is spent on the children of the poor trying to compensate for the parent's lack of education than is spent on parental education to prevent children's school learning and adaptation problems.

New federal laws are calling for integrating adult basic education with early childhood education and this calls for new education delivery systems and methods.

Recommendation 8: That the Legislature require at least 10 percent of the over $1.13 billion that is spent by the State Department of Education's Compensatory Education Office and the Early Child Development Division be redirected to establish programs offering basic skills education for the parents of children who qualify for these two programs; further, that the Legislature require that where child care programs are provided by employers, consideration be given by these programs to providing funding for parent education at work sites.

Need For Professionalism and Research-Based Knowledge In Workforce Education And Training

Findings:

There is no systematic higher education and training to produce professional adult educators and trainers for non-college bound youth and adults, many of whom may suffer from serious learning disabilities.

A critical need exists for research on adult learning and teaching methods that address the widely diverse needs of California's adult learners in workplace and other settings.

Recommendation 9: That the Legislature establish a network of field stations for action research and evaluation on adult education in association with campuses of the California State University and Community College system, oriented to developing information about California's workforce skills needs, abilities of the non-college bound workforce, and the development of improved methods of education and training for non-college bound youth and adults; further that the Legislature require the California State University and Community College systems to establish a formal program to educate and train a cadre of adult educators that can work with the spectrum of education, language, and learning needs of California's undereducated youth and adults.

Need to Raise Awareness about the Literacy, Education, and Training Needs of Underserved Youth and Adults

Finding:

There is a general lack of awareness, knowledge and commitment among business, government and the general public in California regarding the problems of workforce literacy and the educational needs of underserved, typically non-college bound youth and adults.

Recommendation 10: That the Legislature and the Governor emphasize their commitment to workforce literacy by demonstrating leadership in promoting awareness of the personal and economic costs of the marginal literacy, poor education, and unmet training needs that limit the productivity of California's workforce.

Foreword

Projected gains in the California economy over the next decade, the growing use of technology in business and industry, the changing demographics of the population, and a number of national reports regarding the literacy levels of America's youth and adults have raised major concerns about the ability of the California workforce to meet the future skills demands of the workplace.

During the past few years, attention has been focused on improving the primary and secondary education system to provide more qualified entrants into the workforce. By some estimates, however, there are 3.8 to 4.8 million "functionally illiterate" adults in California in need of education and training, two-thirds or whom are in the workforce and most are currently at work.

The realization that 75 percent of the California workforce in the year 2000 is in place today, and 15 to 20 percent may be functionally illiterate, raised concerns about the skills problem of the California workforce and what is being done to respond to them.

In March of 1989, the Legislature's Joint Committee on the State's Economy and the Senate Select Committee on Small Business Enterprises held a hearing to learn what is known about workforce literacy in California. The hearing revealed that there is limited knowledge, both nationally and in California, about functional illiteracy and little in the way of applied research is being done to increase the knowledge.

About $750 million of federal and state funds are spent annually in California on adult education and training. However, the delivery system is fragmented and uncoordinated, making it difficult to adequately assess the system or to do effective planning. A growing number of businesses are seeking assistance in providing literacy training for their workers, yet the ability of the delivery system to help them is limited or not readily available.

In response to these and other issues raised at the hearing, State Senator Ralph C. Dills and Senate President ProTem David Roberti, respective chairs of the two committees, introduced Senate Resolution 20 that created the California Workforce Literacy Task Force.

The charge to the Task Force is to study, analyze and make recommendations on workforce and workplace literacy issues, including, but not limited to, those identified in the hearing that will enable the Legislature to consider and adopt a long-range program to enhance workforce literacy in California.

This report is the distillation of many hours of study and deliberations of the Task Force members. It discusses the issues raised and presents the major findings and recommendations of the Task Force for enhancing the education and training of California's workforce of the 21st century that is presently most in need and least adequately served -- the largely undereducated, typically non-college bound, youth and adults whose productivity forms the base of the state's economic and social future.

Introduction

On March 10, 1989 the California State Legislature's Joint Committee on the State's Economy and the Senate Select Committee on Small Business Enterprises held public hearings on issues regarding illiteracy in California's workforce. The general concern was that the ability of California businesses to compete in the national and international marketplace might be hampered by illiteracy in the workforce.

At the hearings participants identified a number of issues:

> It was noted that there is little information regarding the extent of illiteracy in California's workforce and whether or not illiteracy is a problem in the workplace, and the need for further research was emphasized.
>
> An estimate was presented sugesting that as many as 3.8 to 4.8 million California adults, many of whom are working, are functionally illiterate, and that the number is increasing by 230,000 annually.
>
> It was indicated that there was a need for State agencies, businesses, and other organizations to develop a coordinated and systematic approach in dealing with the literacy problem.
>
> A statement was presented suggesting that cognitive, intellectual skills, including literacy, are transmitted from parents to their children even before schooling starts and that there was a need for a reexamination of the educational practices that currently separate adult literacy development from childhood education.
>
> Finally, it was observed that legislative barriers hampering workforce literacy programs should be identified and removed and funds should be provided to reach a larger number of persons needing literacy and English language education.

The California Workforce Literacy Task Force

Given the breadth and complexity of the issues raised at the March 10, 1989 hearings, and the lack of information regarding workplace literacy problems, the California Legislature on May 17, 1989 passed Senate Resolution No. 20 creating the California Workforce Literacy Task Force.

The mission of the Task Force is to review workforce and workplace literacy issues and develop specific recommendations that will enable the Legislature to consider and adopt a long range program to enhance workforce literacy in California.

Composition of the Task Force

The Task Force consists of 15 members, a Chairperson, and seven *ex officio* members all appointed by the Senate Committee on Rules. Members of the Task Force include representatives from business, labor, government, education, literacy providers, and adult learners. Staff support is provided through the Joint Committee on the State's Economy and the Senate Office of Research. Task Force members and staff are listed at the beginning of this report.

Task Force Working Groups

To accomplish its work, the Task Force formed two working groups. Members of each working group then prepared reports on issues addressed by their group.

Working Group 1: Workforce Literacy Supply and Demand Issues

This Working Group studied the literacy and other skills demands of present and future work in California and compared the demands to the supply of skills in the present and future workforce. The major issue was whether the present and future workforce has the literacy, language, mathematics, and other cognitive skills (reasoning, problem solving) needed to keep California competitive in the national and international marketplace.

Research conducted at the national level on the education and skills demands of work today and in the year 2000 was reviewed and criticized. To gain a better perspective on the situation in California, the Employment Development Department conducted special analyses for the Task Force of the State's jobs today and in the year 2000 to determine any changes in education and skills requirements.

No statewide data were found that allowed the Task Force to compare literacy skill levels of California's workforce to the demands of the workplace. Therefore a number of analyses of sizable, though not necessarily representative assessments of adult literacy skills were conducted. The Defense Manpower Data Center (DMDC) located in Monterey, California prepared data on the skills of over 50,000 of California's applicants for military service in fiscal years 1988 and 1989. Reading levels for over 50,000 participants in Adult Basic Education, over 100,000 participants in the Greater Avenues for Independence (GAIN) workfare/welfare program, and over 100,000 participants in the Immigration Reform and Control Act (IRCA) program were examined. Additionally, reading scores for some 500 applicants for employment in a major manufacturing industry in southern California were obtained.

To get an idea of the extent to which businesses and industries in California are experiencing difficulty in recruiting qualified workers, a survey of some 253 companies in California was conducted.

The results were analyzed to identify the percentages of applicants and employees estimated to be deficient in reading, mathematics, and other skill areas and the extent to which businesses are engaged in providing reading, mathematics, and other basic skills education for applicants or employees.

Working Group 2: A Delivery System for Non-College Bound Youth and Adults

The State of California has taken great pains, through its Master Plan for Higher Education, to develop one of the finest delivery systems for higher education in the world. As a result, California is considered to have one of the best educated workforces in the nation. Through the University of California, California State University, and Community College systems, every high school graduate is afforded an opportunity to obtain a college education. The State will spend almost $5.5 billion in 1990-91 on its higher education delivery system. For those students in need of financial assistance to attend college, grants, loans and scholarships are available.

About 14 percent of students entering high school attend four-year institutions of higher learning. Of these students, about half ultimately graduate.[1] Another 35 percent of entering high school students enroll in community colleges and 10 percent of these students receives an Associate of Arts degree.

But what kind of assistance does the State provide to those 51 percent of students entering high school who do not enroll in a four-year institution of higher learning or a community college? What is California's plan to provide for the education and training of noncollege bound youth and adults, sometimes referred to as the "forgotten half," to assist them in becoming productive members of society?

To answer these questions, Working Group 2 of the Task Force studied the present education and training delivery system for out-of-school youth and adults with literacy skills below the ninth grade, who are not typically college bound. A major issue raised by the Task Force is whether the present delivery system meets the needs of the "forgotten half" of youth and adults.

A second major issue concerns the concept of "family" or "intergenerational" literacy and other cognitive skills development addressed by federal legislation such as the new Even Start program in Chapter 1 of the Education Consolidation and Improvement Act, and the new emphasis upon the literacy development of parents involved with preschool programs such as Head Start. Working Group 2 questioned how these programs of adult and children's education could be articulated with California's adult education and training delivery system.

Over the last seven or eight years, business and industry have voiced support for improving the quality of the K-12 education system. A number of programs have been instituted, such as the California Compact,

adopt-a-school, business-school partnerships, academies and others to bring the resources of business and industry to the schools, and to ease the transition of students into the workplace. The Task Force questioned whether the changes in the K-12 educational programs and the programs of business and industry have improved the ability of noncollege bound students to make the transition from school to work.

Professionalism in Adult Education

A delivery system is only as good as the product it delivers. Yet, regarding adult literacy education, analysts have noted that "We have remarkably little research-based knowledge about what works in basic skills education for adults, and we fail to make very good use of what we do know."[2] Most of the national teaching force in this field consists of school teachers working part-time and volunteers — neither of whom have extensive formal training in basic skills education for adults.

One of the primary concerns of the Task Force is the ability of the current delivery system to provide education and training in the workplace, particularly for small and medium sized businesses. During the 1989 hearing on workforce literacy, one small defense contracting firm revealed the need for literacy training for some members of its workforce. However, when help was sought from community-based organizations and the community college, there were no training programs available to address the firm's literacy problem.

Working Group 2 studied the need for educational programs and research to develop a professional group of adult and lifelong educators and trainers who can assist in the implementation of new lifelong education and training programs. One major issue is whether or not the present system of higher education in California has an adequate program of professional development in adult education and learning; one that meets the needs for lifelong education in the face of a rapidly changing national and international economic environment. A second major issue concerns the need for developing a capacity for research to address problems of lifelong learning, education and training in the workplace, intergenerational transfer of cognitive skills, literacy and other skill demands, and, broadly, the study of adult and childhood learning in relation to economic development.

"Literacy," "Cognitive," and "Intellectual" Skills

Though the Task Force was originally charged with investigating the extent of "illiteracy" in the workforce, it quickly became apparent that "illiteracy," considered as the total inability to read or write is not a major problem. Rather, the problem is better understood as one of differing degrees of "literacy." That is, some people are more skilled and some are less skilled in literacy.

However, in the course of its work, the Task Force also discovered that the concept of "literacy" is interpreted broadly in studies of workplace or workforce literacy. In use, it has come to stand for a wide range of skills

including but going beyond the traditional ones of reading and writing. Other skills frequently referred to by the term "literacy" include oral language communication, mathematics, thinking and reasoning, problem solving, learning, teamwork, interpersonal skills, planning, organizing, and so forth. In this report, all of these skills are referred to collectively as *literacy, cognitive* or *intellectual* skills. In general, these are skills developed in thinking about and learning about the world. Sometimes the skills are developed mostly in formal school settings. But many other times, play and work provide the contexts for skills development.

Though the discussions of workforce "literacy" typically use the term in an expansive sense, most empirical studies of workforce literacy skills use one or another type of standardized reading test. Such tests typically go well beyond basic decoding - that is, simply being able to say a written word aloud. Rather, they involve a wide range of vocabulary and content knowledge, and reasoning and analytical skills in addition to decoding ability. These reading tests serve, therefore, however imperfectly, as proxies for broader assessments of intellectual skills in the workforce.

Footnotes

[1] Paper prepared for the November 1989 California Education Summit. *High School Transitions*, pp. 3-5.

[2] Forrest Chisman.(1989, January). *Jump Start: The Federal Role in Adult Literacy*. Washington, DC: Southport Institute for Policy Analysis, 5-6.

The "Literacy Gap"

In October of 1989, U. S. Secretary of Labor Elizabeth Dole delivered a "State of the Workforce" address to a group of educators gathered in Washington, D.C. to honor those selected as teachers or principals of the year. [1] Her speech sets the stage for the issues to be dealt with in this section, namely those concerning the extent of "illiteracy" or lower levels of literacy in California's workforce and the consequences of lower levels of literacy for productivity and economic viability.

> "The fact is that as we enter the last decade of this century, America faces a workforce crisis. Simply put, America's workforce is in a state of unreadiness...unready for the new jobs, unready for the new realities, unready for the new challenges of the 90's.
>
> A number of factors have led to our precarious situation:
>
> First, the American workplace has undergone revolutionary changes in the past years. Businesses now succeed on the service and qualities of their human resources, rather than material resources such as machinery.
>
> Across the board, jobs are demanding better reading, writing, and reasoning skills. More - much more - math and science.
>
> The assembly line jobs that once required only hand-eye coordination are headed the way of the dinosaurs. The same job now requires the ability to read complex manuals, analyze data, organize information, and make judgments. ...
>
> Those are the needs of our workplace. And they are needs that are not being met by the skills of our workforce. ...
>
> 25 percent of our young people - perhaps as many as one million students a year - drop out of high school. And of those who do graduate, a very disturbing number can't read their diplomas. ...70 percent of all high school seniors can't write a basic letter seeking employment. ...60 percent of them can't correctly add up their own lunch bills.
>
> And our problems extend beyond our future workers to include our current labor force. The skills of a large number of experienced workers are now obsolete or soon will be made obsolete by changes in technology. Additionally, at least 20 million, and possible 40 million adults experience substantial literacy problems. ...
>
> Ladies and gentlemen, there is no doubting that our workforce crisis is a challenge to education, labor, business and government. But it challenges something much more fundamental. It challenges the very foundation on which America is based (pp. 1-2)."

This long quote from the U.S. Secretary of Labor poses a problem that can be called the "literacy gap" issue. Stated succinctly, the problem presented is that *the demand for literacy in the workplace now exceeds the supply of literacy in the workforce.*

Stated more broadly, the concern is that the workplace demands a variety of intellectual skills -- learning ability, reading, writing and oral communication, problem solving, higher-order and critical reasoning, interpersonal, organizational, leadership -- that are in short supply in the workforce. Furthermore, concern is expressed that the educational system is not producing new skillful members of the workforce in the quantities needed.

It has also been argued that because three-quarters of the workers of the year 2000 are already in the workforce,[2] school reform cannot solve the problem. And, as indicated in the Secretary of Labor's comments, it is widely believed that the changing nature of work is making the skills of many of those in the workforce obsolete or otherwise inadequate. [2]

LITERACY: THE SUPPLY AND DEMAND ISSUE

To understand the nature of workforce literacy in California, the Task Force reviewed research that addresses the two major dimensions of the "literacy gap" issue: the literacy demands of work and the literacy skills of the workforce. The work to be considered focusses on studies that have assessed workforce literacy skills in relationship to workplace literacy demands.

In the review that follows, studies concerned with national trends are first surveyed. Then attention is turned to studies of the California situation conducted by the Task Force and associates.

Studies from the U. S. Department of Labor

Findings from studies such as the U.S. Census and the National Assessment of Educational Progress have frequently been combined with other data using Department of Labor methods to provide estimates of the education levels and literacy skills of the workforce in relation to the demands of the workplace.

Education Demands of the Workplace

In a recent study called "Workforce 2000,"[2] sponsored by the Department of Labor, estimates were obtained regarding the percentage of individuals employed in different occupations by educational level as of March 1985. Across all occupations, which included over 105,000,000 workforce members over the age of 16, some 18 percent of workers had fewer than four years of high school. The overall median years of education was 12.8.

The study estimated that by the year 2000, the median years of education for the workforce in these occupations would be 13.8. Then, following traditional Department of Labor practices, the *supply* of workers with 13.8 years of education was turned into a statement of *demand*. That is, it was concluded that there would be an increase in the demand for education from 12.8 in 1985 to 13.8 in 2000. This is based upon the idea that employers will demand what is typically in supply by way of educated workers.

However, there is no evidence that the vast numbers of jobs in the year 2000 will actually demand the new skill levels implied by the increased number of years of education possessed by typical workers. Indeed, numerous past studies of the relationship of years of education to demands for skills in occupational fields have concluded that the increases in education cannot be traced to inceased needs for more highly skilled workers. Instead, it has been speculated that "supply-side" economics may be operating. In this case, the increased supply of more highly educated workers increases the expectation on the part of employers that workers should have more education, so they hire the more highly educated.This leads, then, to an increased tendency on the part of future workers to strive for even more education to gain a competitive edge in the marketplace.The increase in the supply of more highly educated workers pushes the demand still higher and so on. [3]

Reading, Writing, and Speaking Demands of Jobs

To estimate the skills demands of jobs, the Department of Labor has devised a job analysis methodology in which analysts visit jobs, study job descriptions, and rate the jobs for language (reading, writing, speaking) and other skills requirements.

The General Education Development (GED) rating scale contains scores from 1 through 6 to characterize the global demands of different jobs or occupations for reading, writing, and speaking skills. As Table 1 indicates, at the bottom of the scale, occupations or jobs rated at skill level 1 demand workers who can recognize the meaning of 2,500 (two-or three-syllable) words; read at a rate of 95-120 words per minute; print simple sentences and similar low level basic language skills. Level 2 occupations demand a greater vocabulary and faster reading rate, the ability to read instructions similar to those for assembling model cars and airplanes, to write compound and complex sentences, and to speak clearly and appropriately. In a similar fashion, more demanding occupations receive higher GED ratings.

In the Workforce 2000 study, analysts rated twenty-five occupations fields for GED demands in 1984 and the year 2000. It was found that "the mean GED for language barely shifts from 3.1 in 1984 to 3.2 in 2000." [2] However, the mean GED level for *new* jobs only, not including the previously existing ones, was estimated at a 3.6 level of competence.

However, while the demands for literacy in the new jobs to be created by the year 2000 appear to increase somewhat, sixty percent of the jobs, employing around 77 million workers out of a projected workforce of around 130 million, will demand less than a 3.0 GED level. As Table 1 indicates, jobs below the 3.0 level correspond roughly to completion of the 7th grade of school, that is, less than 8.0 years of education. Yet, in 1985 only six percent of workers had 8 or less years of education, and that percentage was projected to shrink to 4.0 by 2000.

But years of education do not necessarily indicate the extent of competence of workers. The 1985 national survey of the literacy skills of young adults (21-25 years) found some 20 percent reading less well than typical eighth grade students. [4] A 1980 Department of Defense study of a nationally representative sample of young adults 19 through 23 years found 28.3 percent reading below the 8.0 level, with an overall median of 9.6 (sixth month of the ninth grade). [5]

Accepting the higher estimate of the Department of Defense, the estimate using Department of Labor methods that sixty percent of the jobs of the year 2000 will demand less than eighth grade skills suggests there will be many jobs that can be performed by lower skilled members of the workforce.

At the other end of the scale, ratings of 4.0 or above are estimated to correspond roughly to completion of eleven or more years of education (Table 1). In assessments of skills, the National Assessment of Educational Progress study of adult literacy in 1985 reported 60 percent of young adults with skills equal to or exceeding those of eleventh grade students.[4] The Department of Defense study reported 33 percent of young adults reading above an eleventh grade level.[5] These estimates suggest that, at least within the population of younger adults, the nation has an adequate supply of literate workers to fill the jobs in the year 2000 that will demand skills at or above the 4.0 (eleventh grade plus) level.[6]

The Local Scene

Though the "Workforce 2000" studies do not suggest a national "literacy gap" between workforce skills and workplace demands through the year 2000, this should not be taken to mean that there are no literacy problems in the nation's workforce. Local problems are not necessarily represented in broad, national assessments. The supply of suitably literate job applicants may not always match the demand at a local site.

It should be noted that measured skill levels for African-Americans and Hispanics place these groups well below the levels of whites. In the Department of Defense study, whites had an average approximate reading grade level of 10.5 compared to 7.5 for Hispanics and 6.8 for African -Americans.[5] Similar findings were reported in the National Assessment of Educational Progress's assessment of young adult literacy.

Table 1

Education, Skill Levels, and Numbers of Workers in 25 Occupational Categories in 1984 and 2000.

Years of Education[a]	DoL Skill Level[b]	Literacy/Language Tasks for This Skill Level	Occupations	Number In Occupation 1984	2000
0-4 (2.4%)	1	Recognize meaning of 2,500 (two- or three-syllable words. Read at rate of 95-120 words per minute. Compare similarities and differences between words and between series of numbers. Print simple sentences. Speak simple sentences using normal word order.	Helpers/laborers; Hand working occupations; Machine Setters & operators; Extractive workers	12,474,682 (11.8%)	12,022,982 (9.2%)
5-7 (4.2%)	2	Passive vocabulary of 5,000-6,000 words. Read at rate of 190-215 words per minute. Read adventure stories and comic books, looking up unfamiliar words in dictionary. Read instructions for assembling model cars and airplanes. Write compound and complex sentences.	Transportation & Material Moving; Agriculture/forestry/ fishing; Precision Production; Mechanics/ installers/repairers; Service occupations; Plant & System occupations; Construction Trades; Administrative Support Occupations	54,082,214 (51.5%)	65,530,795 (50.0%)
8-10 (14.2%)	3	Read a variety of novels, magazines, atlases, and encyclopedias. Read safety rules, instructions in the use and maintenance of shop tools and equipment, and methods and procedures in mechanical drawing and layout work. Write reports and essays with proper format, punctuation, spelling and grammar, using all parts of speech. Speak before an audience with poise, voice control, and confidence using correct English.	Blue-collar worker supervisor; Marketing and sales occupations.	12,097,771 (11.5%)	16,242,109 (12.4%)
11-12 (43.8%)	4	Read novels, poems, newspapers, periodicals, journals, manuals, dictionaries, thesauruses, and encyclopedias. Prepare business letters, expositions, summaries, and reports, using prescribed formats and conforming to all rules of punctuation, grammar, diction, and style. Participate in panel discussions, dramatizations, and debates. Speak extemporaneously on a variety of subjects.	Technical occupations; Other professional/para-professional/technical; Writers/artists/entertainers/athletes; Management related; Teachers/librarians/ counselors; Social/recreational/religious workers.	21,151,501 (20.1%)	29,220,778 (22.3%)
13-17+ (28.4%)	5&6	Read literature, book and play reviews, scientific and technical journals, financial reports and legal documents. Write novels, editorials, manuals, and critiques.	Engineers, architects, surveyors;lawyers,judges; natural/computer/mathematical scientists; Social scientists; Medical/Health	5,201,840 (4.9%)	7,943,343 (6.0%)
			Totals:	105,008,000	130,959,999

[a]Years of education corresponding to DoL skill levels and percent of workers with this level of education in 1985, from Russell W. Rumberger, "Discussion paper: The definition and measurement of workplace literacy,"Paper prepared for the California Workforce Literacy Task Force, January 10, 1990. [b]Department of Labor General Education Development skill levels and tasks, occupations, and numbers in occupations from Mathew P. Jaffe, "Workforce 2000: Forecast of occupational change: technical appendix," Indianapolis, IN: The Hudson Institute, June 1987.

On the average, minorities, who will make up a larger percentage of the workforce by the year 2000, have literacy skills matching the least demanding, lower paying jobs.

Not surprising, then, industries located in regions where there are large numbers of undereducated whites, African-Americans, and Hispanics have frequently found that the locally available supply of workers do not always possess the level of literacy demanded by new production methods and new work organizations (e.g., collaborative teams versus assembly line individuals).

For instance, studies of apparel and textile industries concentrated in the rural Southern states have revealed a large increase in programs to improve basic literacy, numeracy, and oral communication skills of the work force. Almost 30 percent of federally funded workplace literacy programs in North Carolina are in textile mills.

In Mississipi, reading tests were given to employees at several manufacturing firms who choose to enroll in basic skills courses. In one class of seventeen employees, twelve scored below the seventh grade level in reading. In another class of nineteen employees, 12 scored below the seventh grade in mathematics. At another company in the area, out of 31 employees tested in basic skills programs, nineteen scored at or below the seventh grade level in reading, and nine scored at or below the fourth grade level. [7]

In New York city, workplace literacy programs for members of several labor unions report many workers with reading skills well below the seventh grade. In one class of twelve United Auto Workers, all read at or below the sixth grade level (4.9 grade level average).[8]

In the data files maintained by the New York city-based Literacy Assistance Center, data for 12,628 basic education students in 1987 showed 3,831 (30 percent) reading below the fifth grade level, with 8,984 (71 percent) reading below the seventh grade level. Of those reading below the fifth grade level, thirty percent were employed full time, while 28 percent of those reading below the seventh grade level were employed full time. These figures do not include those enrolled in English as a Second Language programs, and so they tend to underestimate the extent of lower literacy skills in workplaces in the communities served by the Literacy Assistance Center.[9]

Scattered data like the foregoing indicate that there are many employed adults whose literacy skills are very low. The fact that these data are for employed workers enrolled in literacy programs suggests that either the employees or the employers or both feel that improved literacy skills could payoff in the workplace.

Studies of the "Literacy Gap" in California

To determine the extent to which the national concerns for workplace literacy applied to California, The Task Force conducted a number of

studies that (1) partially replicated the national Workforce 2000 studies; (2) assessed the literacy skills of samples of California's youth and adults; (3) surveyed employer perceptions of and responses to skills deficiencies of job applicants and employees; (4) surveyed labor unions regarding the skills deficiencies of their members; and (5) obtained recommendations from adult learners regarding their personal problems encountered in obtaining, holding and progressing in a job in California.

Workforce 2000: The California Study

Using the same U.S. Department of Labor methods as used in the national Workforce 2000 study, the California Employment Development Department conducted a partial replication of the national study. It found that by the year 2000 there will be over 15 million jobs in California with the education and skills requirements as indicated in Table 2.

Overall, the data show a slight shift toward the requirement for higher levels of education in all three "literacy" skills in the year 2000. Using the "Average" column of Table 2, it is seen that the percentage of jobs in California requiring eight or fewer years of education will decline from 60.1 to 58.8 in the year 2000. At the same time, the percentage of jobs requiring skills at the 13th or higher years of education will increase from 15.8 to 16.8.

The second column of Table 2 shows the percentage of California's adult population 25 years old or older in 1987 possessing the different levels of education. Comparing this column to the "Average" column for the year 2000, it can be determined that, in terms of required years of education, California's present adult population possesses more than the needed education to meet the demands of the year 2000. For instance, whereas only 16.8 percent of jobs in the year 2000 will demand 13 or more years of education, 47 percent of California's present adult population possesses that many years of education.

Table 2

"Literacy" Demands of California's Jobs in 1987 and 2000 Compared with Skill Levels (Years of Education) of Adults.

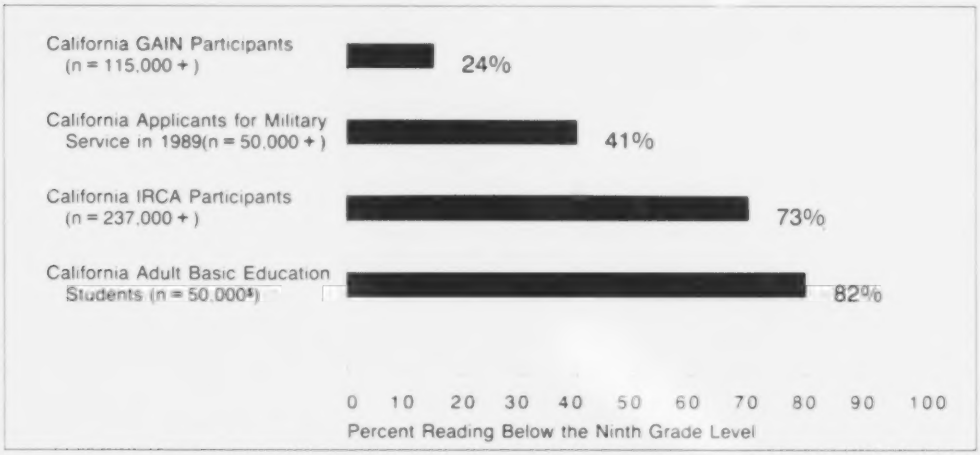
Years of Education	Percent With[a] Education	"Literacy" Skills Required on the Job							
		Mathematics		Language		Reasoning		Average	
		1987	2000	1987	2000	1987	2000	1987	2000
8 or fewer	11.9	78.1	76.9	58.3	56.5	44.0	42.9	60.1	58.8
9-12	41.1	14.3	14.9	24.5	25.1	33.5	33.4	24.1	24.5
13+	47.0	7.6	8.2	17.2	18.4	22.5	23.7	15.8	16.8

[a] Percent of adults 25 years old or older in California in 1987 with the indicated years of education. Source: Adult Education for the 21st Century, California State Department of Education, May 15, 1989, page 14.

Minority group differences. While the overall statistics suggest that California's adult workforce more than meets the demands of the workplace for years of education, there are wide differences among minority groups. For instance, over 30 percent of Hispanics 25 years or older in 1987 had completed less than 8 years of education, and fewer than 20 percent had completed 13 or more years of education.[10] Thus, California's fastest growing and largest minority group will tend to meet the educational requirements for only the least demanding jobs of the 21st century.

Figure 1

Percentage of youth and adults scoring below the ninth grade literacy level in several programs.


California GAIN Participants (n = 115,000 +)
24%
California Applicants for Military Service in 1989(n = 50,000 +)
41%
California IRCA Participants (n = 237,000 +)
73%
California Adult Basic Education Students (n = 50,000+)
82%
0 10 20 30 40 50 60 70 80 90 100
Percent Reading Below the Ninth Grade Level

Source: Comprehensive Adult Student Assessment System (GAIN; IRCA;ABE); Armed Forces Qualification Test for military applicants.

Studies of Measured Literacy Skills

Because years of education may not accurately reflect actual skill abilities of youth and adults in California, the Task Force obtained data on the reading and mathematics skills of several samples: the California participants in the Greater Avenues for Independence (GAIN) welfare education program; participants in California's Immigration Reform and Control Act (IRCA) program; learners in California's adult basic education (ABE) program; [11] and applicants for military service in fiscal year 1989.[12]

The data are summarized graphically in Figure 1. The data have been converted to "reading grade levels" to make comparisons possible. Actually, however, both the Comprehensive Adult Skills Assessment System (CASAS) tests and the Armed Forces Qualification Test assess various aspects of mathematics skills, too.

As Figure 1 indicates, a sizeable percentage of these various adult groups score below the ninth grade level in literacy skill. The large percentage of Adult Basic Education (ABE) students with skills at the 8th grade level or below reflects the very large percentage (about 80 percent) of non-English speaking participants in the state's ABE program. This is also true of the IRCA program.

Perhaps the most important data of Figure 1 are those indicating that over 40 percent of California's applicants for military service in fiscal year 1989 scored at the 8th grade level or lower in literacy skills. These are actual applicants for work in the military, and so they suggest the levels of skills of entry level workers for semi-skilled and skilled work in California.

And of even more concern is the fact that for African-American and Hispanic male applicants for military service, the percentages with literacy skills below the ninth grade increased to over 60 and 50 percent, respectively. This confirms the data on education reported above, and further suggests that the majority of minorities presently qualify for only the least skilled jobs in California's economy, and this will likely persist into the 21st century unless drastic action is taken.

In a study of a nationally representative sample of young adults 18 to 23 years of age in 1980, the Department of Defense found an overall median reading grade level of 9.6, with some 40 percent scoring below the 9.0 grade level. Assuming that California's population is similar to the national population, it is conservative to estimate that about a third of youth and adults in California read below the ninth grade level. Using U.S. Census estimates of some 21 million persons 15 years old and over in California in 1987, *it is likely that some 7 million or more of California's youth and adult population read below the 9th grade level.*.

Literacy and Job Performance

Years of education and skills levels do not directly reveal the relationship bewteen literacy and job performance. To obtain this type of information, studies are needed in which worker's literacy skills are directly correlated to job performance.

To date, such studies have not been found for civilian workplaces. The most extensive work of this nature was undertaken in California at the Presidio of Monterey by the Department of Defense over twenty years ago.[13] The studies made three important findings. First, a given job may be performed satisfactorily by workers with a wide range of literacy skills. Second, workers with higher reading skills performed job tasks better. Third, there is no identifiable literacy point below which all workers cannot perform their jobs satisfactorily.

In studying literacy demands of military jobs, measures of reading, listening, and arithmetic were related to three measures of job proficiency: job knowledge, paper-and-pencil tests; job sample, performance tests; and

supervisor's ratings. Measures were obtained for some 400 job holders in each of three military jobs having civilian counterparts: Cooks, Supply Clerks, and Automotive Repair.

To develop the job knowledge and job sample tests, extensive job and task analyses were undertaken. The job knowledge measures were multiple choice tests for each job. The test items were selected for relevance to job performance, that is, "need to know" not simply "nice to know" information.

The job sample tests were constructed to represent the key tasks, in terms of essentiality, frequency, and urgency, typically performed by personnel in the jobs. The tests were administered by trained testing crews, at special test sites, using normal equipment.

Cooks cooked scrambled eggs on a field stove, made jelly rolls, cocoa, and completed mess forms; Supply Specialists worked in a fully equipped mock-up supply room; and Automotive Repairmen worked in typical settings on vehicles with installed faults that had to be detected and repaired using appropriate tools and specifications.

Table 3

Percent of Personnel at Seven Levels of Reading Ability Who Scored Above the Median on Job Knowledge (JK) and Job Performance Measures.

Reading Grade Level	Automotive Repairman		Supply Specialist		Cook	
	JK	JP	JK	JP	JK	JP
11-14.5	88	72	82	77	69	78
10-10.9	65	64	71	56	76	58
9- 9.9	70	57	57	54	71	68
8- 8.9	40	47	43	53	63	58
7- 7.9	42	37	38	39	43	49
6- 6.9	34	41	26	29	33	32
4- 5.9	25	44	17	34	16	27

Source: T. Sticht, J. Caylor, R. Kern, & L. Fox, "Determination of Literacy Skill Requirements in Four Military Occupational Specialities" (Technical Report 71-23, Human Resources Research Organization, Alexandria, VA, November 1971), Figures 9, 10, & 11, pp. 30-32.

Overall, there was a positive relationship between the literacy measures and the indicators of job proficiency.Table 3 illustrates the importance of literacy (reading) to job productivity indicated by job knowledge and job sample measures. It shows the percentage of personnel at each of seven levels

of reading proficiency who scored above the median level of performance on the job proficiency tests. As noted earlier, this table presents three important findings. First, in all three jobs, there is a wide range of reading abilities, with scores ranging from below the 6th grade level to above the 11th grade level. Since all of these personnel were on active duty, and correlations of reading with supervisor's ratings were quite low, it seems reasonable to conclude that all of these personnel were performing more-or-less satisfactory in the eyes of management. Apparently, a given job may be satisfactorily performed by workers with a wide range of literacy skills.

A second major finding is that the relationship of reading to job knowledge and job sample performance is positive. As reading improves, the proportion of personnel scoring above the median increases.This suggests that, if the schools are successful in educating students to higher levels of literacy, this pays off in improved job proficiency both in terms of what one knows and what one can do.

The third important finding from Table 3 is that the relationship of reading to proficiency is continuous, there is no noticeable "literacy gap." That is, there is a gradually increasing percentage of personnel who performed above the median on the job proficiency measures as reading level increases. There is no point above which everyone scores above the median, and below which everyone scores below the median.

This finding illustrates that setting the reading requirements of a job in terms of a minimum level of achievement, such as the 8th or 9th grade level, below which one does not qualify for work, may exclude many people who can actually perform the job.

For instance, if Supply Specialists were required to read at the 9th grade level, then 43 percent of those reading at the 8th grade level who could have scored above the median on the job knowledge test would be rejected, while 53 percent of those who could have scored above the median on the job sample test would be rejected.

The problem of setting minimum levels for literacy is compounded by the fact that, in the present case, since all the personnel examined were active job encumbents, supervisors seemed to accept all of these personnel as more or less satisfactory, even those reading at the lowest levels. This raises the issue of just what measure or measures of job proficiency should be used to assess the relationship of literacy to proficiency.

Literacy and productivity. Demonstrations that literacy can be directly linked to job productivity are rare. However, military research has been conducted that illustrates how both the possession of higher levels of reading *and their use* can contribute to improved productivity in performing job tasks.

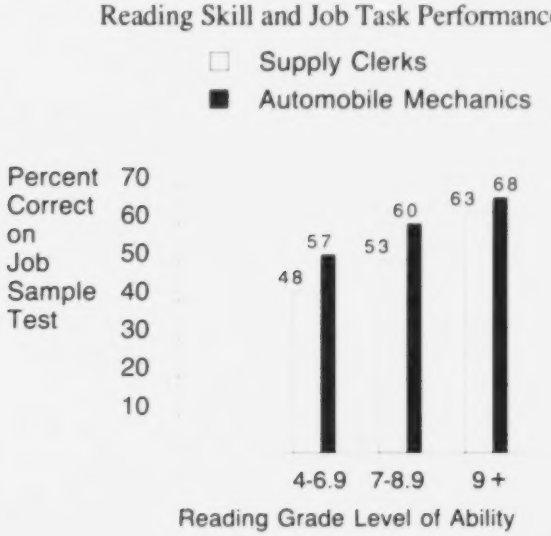
In studies by the U.S. Army at the Presidio of Monterey, personnel working as Supply Clerks and Automobile Mechanics were administered standardized reading tests. Additionally, they were administered job-sample tests that simulated actual job tasks. Working in a mock-up of a

supply office, Supply Clerks filled out requisition forms, tabulated issued items and so forth. Automobile Mechanics repaired brakes, tuned engines and performed other maintenance and repair tasks. Personnel were allowed to use appropriate technical manuals.

During the job sample testing, the examiner kept records of who used the manuals and who did not. While the results indicated that increased reading skills contributed to improved performance averaged across both jobs even when manuals were not used, the improvement was greatest when manulas were used.These data are presented in Figure 2.

As indicated, productivity increased 15 percent from 48 to 63 percent correct when reading skills of Automobile Mechanics increased from 6.9 or below to 9th grade or above. For Supply Clerks, productivity increased 11 percent from 57 to 68 percent correct on job sample tasks as reading skills increased from below the 7th to above the 9th grade levels.

Figure 2



To the Task Force's knowledge, these are the only data available in either military or civilian research that show the direct effects on productivity of both having higher reading skills *and using them* during the performance of actual job tasks. These data suggest that, when job tasks are complex enough that memory is usefully supplemented by text materials, and when reading is actually used to mediate between task demands and task performance, productivity is likely to increase.

Employers Perceptions of the "Literacy Gap"

Given the demonstrated relationship of literacy skills to productivity, it is of interest to know whether employers are aware of a "literacy gap" and, if so,what they are doing about it.

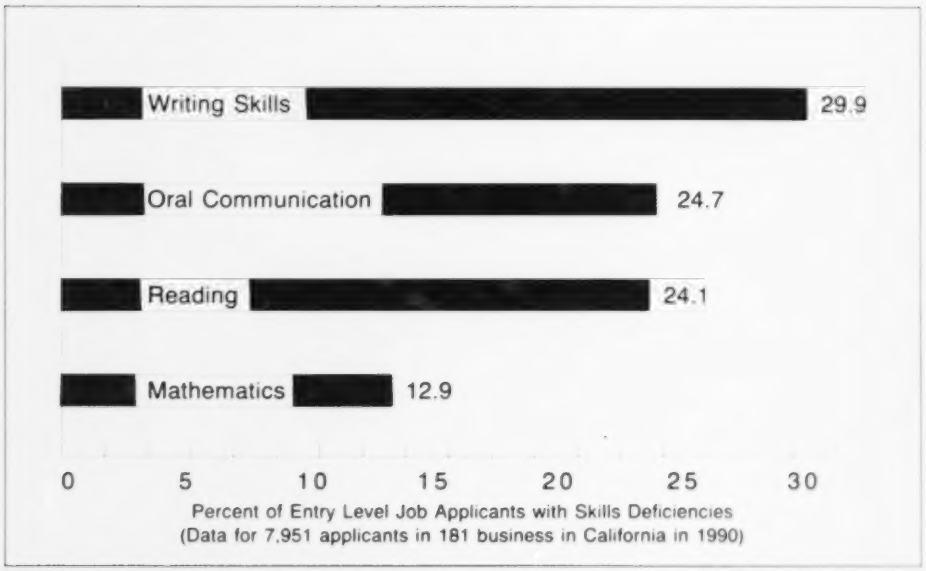
A recent survey by the American Management Association of over 1,000 human resources managers found that about a third perform some sort of testing for literacy or "basic" skills. And this is a relatively new phenomenon, with 72 percent of those who test having begun their assessments in the 1980s. It seems there is a growing awareness on the part of business and industry regarding the importance of literacy for work.[14]

To determine business and industry interests in literacy skills in California, Task Force member Dagmar Muthamia of the IMACC Corporation surveyed 2900 human resources professionals in California. Of the 242 firms that responded, 197 or 82 percent said they were having trouble hiring qualified workers.[15] This ranged from 70 percent for transportation/communication industries to 91 percent for health care.

Regarding the assessment of literacy skills, 46 percent said their organization did not assess skills, 17 percent said they tested for all jobs, and 35 percent said they tested for some jobs (2 percent gave no response).

Figure 3

Literacy Skills Deficiencies of Job Applicants



Source: Dagmar Muthamia. (1990). *PIRA Literacy Survey*. Sacramento, CA: Paper prepared for the California Workforce Literacy Task Force.

Job applicants. A "literacy gap" was reported for applicants for work in 181 companies (Figure 3). For some 30 percent of job applicants, writing skills were below those demanded for employment. For about a quarter of applicants, oral communication and reading skills were below expectations, while about one in eight applicants was perceived to be deficient in mathematics skills.

These judgments of skills deficiencies are not inconsistent with the Department of Defense report that over 40 percent of applicants scored at or below the 8th grade level in literacy. Additional evidence for applicant skills were obtained by the Task Force from a community college in San Diego that has been testing applicants for work in a major defense technology firm. Data for some 500 applicants revealed that 25 percent were reading below the 9th grade level.[16]

Job employees. In the survey of California companies, whereas a sizeable portion of job *applicants* were considered to be deficient in literacy (basic skills), a much smaller percent of *employees* were considered deficient. For over 8000 employees in 220 companies, only one in eight were considered deficient in writing and oral communication, 9 percent were estimated deficient in mathematics, and 5 percent were estimated deficient in reading.

For the most part, companies reject applicants with skills deficiencies from work. In the American Management Association study, 84 percent of companies said that they do not hire applicants with skills deficiencies. Presumably this is why there are so many more skills deficiencies for applicants than for employees in the sample of California companies.

Labor's Perception of the "Literacy Gap"

In a study by Task Force member A. David Sickler of the AFL-CIO, 77 percent of unions representing some 300,000 California workers in six job areas stated that many of their members need basic skills upgrading in order to perform their current job.[17] On average, unions estimated that 28.3 percent of their membership suffered from a "literacy gap."

Almost 40 percent of the unions responding stated that they have had members dislocated due to literacy deficiencies.Two-thirds of the unions anticipated a need for basic skills upgrading for their membership due to changes occuring at the workplace.

For the most part, labor perceived the skills most in need of improvement as English as a second language (61 percent). Reading, writing, and oral communication were roughly equal at around 40 percent of unions thinking their membership could use upgrading in these skills for promotions to higher positions.Mathematics was perceived as important by 48 percent of unions as a skill area for upgrading for career mobility.

Adult Literacy Students' Perceptions of the "Literacy Gap"

Letters from over 75 adult literacy students were obtained for the Task Force by Enrique Ramirez, the adult learner member of the Task Force and others.Students in adult literacy classes had many specific problems that they identified as "gaps" in their workplace literacy skills. For instance, one learner emphasized his difficulties in composing business letters. Another specified the need to read repair manuals and safety procedures. Another wrote about the need for state government agencies to help improve

employee reading and writing skills to pass promotion tests. And, of course, many others emphasized the need for improvements in English language skills for those whose native language is not English.

An often referred to problem by those in adult literacy classes was their "learning disability." This was more frequently mentioned by those learners who were not employed than those who were employed. But both groups made some references to learning disabilities.

Several learners recommended that employers test employee skills and make learning opportunities available in a way that does not stigmatize the learner for low literacy skills. Several asked for guarantees that workers who "came forward" to admit their poor skills would not be fired or otherwise punished.

Discussion

The studies of the Task Force regarding the "literacy gap" issue suggests several conclusions. First, it should be noted that both the Department of Labor data base and the military studies of literacy and productivity are twenty years old. There is a surprising lack of up-to-date information regarding the literacy or other intellectual skills required of work and the availability of such skills in the workforce. Therefore all conclusions regarding the "literacy gap" based on these data bases should be regarded as tentative until results from more conclusive, contemporary studies are available.

One thing that does emerge clearly from the studies and analyses reviewed is that "literacy" must be interpreted broadly to mean much more than just the ability to read and write at a basic level. Instead, literacy must be construed as referring to the possession of a large amount of knowledge, both academic and "worldly." This knowledge must be expressible in oral and written language; there must be knowledge of and the ability to use mathematical concepts and procedures; there must be the ability to reason and problem solve with one's knowledge; and an ability to interact in society.

Data reviewed from both national and California studies suggest that, while there is a trend for jobs to move toward demanding higher cognitive skills, by the year 2000 and beyond there will still be a very large number of jobs that require skills at or below the eighth grade level in mathematics, language, and reasoning.

In California, the adult population as a group, now and into the foreseeable future, appears to possess the education, and skills, to enter into the workplace. However, getting a *well paying* job will pose considerable difficulties for those with less than ninth grade skills. They must compete with California's adult population that, in 1987, consisted of almost half with 13 or more years of education.

For the most part, *productivity*, and not employability, or the ability to find some sort of job, is most significantly affected by literacy ability. Generally speaking, the greater one's literacy, the better the quality of work one can get and the more productive the person is. The studies reviewed suggest that, at a minimum, adult education and training ought to aim at providing skills up to those typical of the beginning ninth grade (high school) student. The studies reviewed showed that in three semi-skilled and skilled jobs, possessing the skill level of a typical ninth grade student is associated with being in the upper half of job productivity. And, if in addition to possessing 9th grade or higher literacy skills, one also uses them in performing more complex tasks, considerable improvements in productivity may follow.

Unfortunately, the available, limited evidence suggests that most students who enter into literacy education in California with less than 9th grade skills do not achieve this level of skills. This is one reason that new delivery systems and new instructional methods for the training and education of non-college bound, less well-educated youth and adults must be sought.

Footnotes

[1] Elizabeth Dole. (1989, October). *State of the Workforce Address: Delivered to the State Teachers and Principals of the Year*. Washington, DC: U. S. Department of Labor.

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[3] Russell W. Rumberger & Henry M. Levin. (1989, May). *Schooling for the Modern Workplace*. Paper prepared for the Commission on Workforce Quality and Labor Market Efficiency. Washington, DC: U. S. Department of Labor.

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Workforce Literacy Delivery System

One of the primary goals of the Task Force was to review California's workplace and workforce literacy programs that consititute the delivery system for workforce literacy education.

In the process of looking at the plethora of state programs which provide educational services and training to adults, the Task Force reviewed a list of 23 programs compiled by the State Employment Development Department which could provide literacy-related services through the provision of job training, rehabilitation, vocational education and adult education.[1]

This listing focused primarily on those programs that provide services for individuals seeking employment and training -- many of whom are already "literate." Not included were other programs, such as the California Literacy Campaign, which are volunteer-based and provide literacy services to individuals throughout the state, nor did it include social service programs directed to children and youth which provide some parenting education.

To refine the list, Working Group 2 of the Task Force developed a matrix which provided an explanation of the programs, the estimated dollars spent on literacy services, the population served by the programs, reports on effectiveness and linkages with other programs. Of the 23 programs that had been identified, the working group narrowed down to 13 those programs or statewide private programs that provide specific literacy services (see Table 4).

No Clear Policy Regarding State Literacy Goals

Given the large number of programs providing literacy-related workforce education and training and the substantial amount of money being spent on those programs, it seems that the state should have established goals and policies regarding the provision of services and the coordination between programs. However, an examination of state law reveals a lack of any clear-cut policy.

The California Department of Education, the largest provider of adult education services, has been guided by an outdated Master Plan for Adult Education. The plan, which became law in 1976, (two years before Proposition 13 led to a radical change in the method of financing educational services), lays out legislative intent and established basic definitions to guide school districts that provide educational services to adults. The law, contained in Section 8500 of the Education Code, declares that "adult continuing education is essential to the needs of society in an era of rapid technological, economic and social change," but does not specify priority programs or services.

Recognizing the need for better planning and delivery of adult education service, in 1989 the State Department of Education released a report entitled *Adult Education for the 21st Century*, an action report compiled by the Adult Education Advisory Committee. The purpose of this strategic plan is to develop a long-term vision of adult education into the 21st century and to transform the vision into reality. Specifically, the plan, comprised of 14 specific proposals, provides a blueprint for adult schools and other adult services funded through the Department of Education. The plan places a high priority on establishing coordination among adult schools and other educational providers.

The Employment Development Department (EDD) has the responsibility of administering six of the State's major training programs. Unemployment Insurance Code Section 9600 et seq. (Article 2) spells out the general duties and functions of EDD. The code does not enumerate general policy goals of the department, nor does it list literacy (or any other skill) as being part of the responsibility of EDD.

Literacy is mentioned in other areas of the codes -- the Employment Training Panel, community correctional centers, the State Library, the Greater Avenues for Independence Program and the Family Economic Security Act all address the provision of literacy skills as one of the many services provided to clients.

With the exception of the Families for Literacy Program, none of these code sections delineate the type of literacy services to be provided, the goal of the State in providing these services, or a method for determining the success of the programs.

Implicit in the codes are the assumption that literacy services related to adult education are provided with the goal of increasing the educational level of the student. Likewise, literacy services provided through the employment training programs are assumed to help the client attain employment. Literacy services provided through the libraries are assumed to increase the reading pleasure, general knowledge and skills of the students.

The Delivery System

The 13 programs included in the Task Force listing of Table 4 either currently provide literacy services, or they provide basic skills training either as an end goal or as part of a general training program, or they do not currently provide literacy or basic skills training, but serve a target population in such a way that services could be provided.

These programs either receive state funds, a mix of state and federal funds, primarily federal funds, or private sector dollars. While there are a number of excellent non-profit agencies that provide literacy and basic skills services, limitations on the Task Force's ability to survey every program resulted in only the two major statewide literacy programs being listed.

Table 4

California's Workforce Literacy Programs

Program	Estimated Funding	Estimated Numbers Served
Adult Schools	$461,000,000	199,500 ADA
Community Colleges	129,000,000	86,500 ADA
Regional Occupation Centers & Programs	95,000,000[a]	147,396[a]
Public Libraries	3,063,000	24,249[b]
Job Training Partnership Act	61,600,000[c]	47,230[c]
Employment Training Panel	4,500,325[d]	1,600[d]
Division of Apprenticeship Standards	5,998,000	50,000
California Department of Corrections	58,600,000	15,000
California Youth Authority	30,800,000	6,000
County Jails	5,700,000[e]	5,323 ADA[e]
California Conservation Corps	512,000[f]	1,460[f]
California Literacy, Inc.	Varies greatly[g]	13,625[g]
Literacy Volunteers of America	Varies greatly[h]	1,750[h]
Totals (see caution below):	$853,261,325	599,633

NOTE: These are estimated funding and numbers served for participants in non- credit or remedial education programs in Fiscal Year 1990-91, except where noted. See footnote 21, page 41, for sources and additional notes. **CAUTION**: Total dollar figure overestimates amounts for the 11 programs with funds listed due to duplicate reporting, such as JTPA monies mixed in the Adult Schools budgets. No fund listing was available for 2 of the 13 programs. For these reasons the total funds given do not accurately state the exact amounts available for adult literacy education. The total numbers served is also misleading because it mixes ADA figures, in which one ADA may involve 2 or more students, with actual individual participation in some programs. Thus, the numbers served is probably underestimated. Apparently no one knows the exact funding or numbers served in these programs.

The following summaries of programs listed in Table 4 provide a brief program description, the dollars spent by each program, and the target population served.

Adult Schools

Adult education programs provided by local school districts are designed to involve adults in relevant general education programs which will improve literacy skills, employability and parenting abilities. Programs that meet the special needs of persons with disabilities, older persons, and non- and limited-English speaking adults are also provided.

The general adult education programs serve high school dropouts, dislocated workers, older adults, disabled adults and ex-offenders. The Legislative Analysts Office estimates that in 1990-91 adult education average daily attendance (ADA) will be 199,500 (pp. 937-938).[8] A large number (an estimated 400,000 in 1990-91) of newly legalized residents participate, primarily in English-as-a-Second Language (ESL) adult education programs.Through the GAIN program, public assistance recipients also receive educational service through adult schools.

Adult education receives state funding based on average daily attendance (ADA). In 1990-91, it is estimated that, in total, $461 million will be spent on adult education. Of this amount, $303 million comes from the state General Fund (of which $14 million is specifically for GAIN), $143 million is provided through IRCA funds, and $11 million is from federal Adult Basic Education funding.

Community Colleges

Ninety-four of California's 107 community colleges provide non-credit basic education. According to California statutes, non-credit basic education is the responsibility of the high school and unified school districts, except in those instances where, by mutual agreement, the responsibility is assigned to a community college district.

Community colleges have an open enrollment policy which allows individuals that have completed high school with skills deficiencies or adults who have dropped out of school to enroll in noncredit adult education courses. Generally, community college adult education serves high school dropouts, new immigrants, displaced workers, disabled adults, parents, prisoners, older adults and GAIN participants.

Regional Occupation Centers and Programs

Seventy Adult Regional Occupation Centers and Programs provide centralized vocational education training to high school students, out-of-school youth and adults. ROC/Ps are also used to provide training funded by state and federal programs, including GAIN. According to a study conducted in 1989, an estimated 40 percent of all enrollees are out of high school.[7] Based on this assumption, in 1990-91 approximately $95 million in noncredit educational services will be provided to adults (pp. 895-896).[8]

The Effects of the Immigration Reform Control Act on Workforce Literacy Services

The Immigration Reform Control Act of 1986 (IRCA) provided an opportunity for persons who had been living illegally in the United States to become lawful residents and eventually qualify for citizenship.

In order to obtain residency, "pre-1982" individuals (undocumented persons residing in the U.S. prior to 1982) are required to prove that they either (1) have a minimal understanding of ordinary English and U.S. History, or (2) are satisfactorily pursuing a course of study.

In order to assist states and local governments in providing the educational services and social services these new residents require, the federal government authorized State Legalization Impact Assistance Grants (SLIAG) -- of which California's share totaled $1.7 billion. Approximately $354 million of total SLIAG funds have been used to temporarily increase the capacity of California's adult education system. Of the five states most impacted by IRCA, California ranks next to last in SLIAG spending on education.[2]

In California, it is estimated that IRCA will result in 1.6 million "amnesty" applicants. Of these individuals applying to become legalized residents, 90 percent will be over 18 years of age.[3] Therefore, a significant number of adults will require basic educational services in order to meet eligibility standards. The educational delivery system for IRCA is comprised of adult schools, community colleges, and private non-profit agencies, all of which are required to perform a pre-enrollment appraisal of newly legalized residents.

The statewide data from the pre-enrollment appraisals was made public in early 1990. This information gives both a demographic and educational profile of students. Of the 265,641 appraisals reported, approximately three-quarters of all students were placed in ESL Low Beginning or ESL Beginning classes because they were not sufficiently proficient in English to be tested, or because they scored below the minimum required competency level. [4]

Eighty-nine percent of students scored below the minimum competency level on the listening test -- meaning they did not have the skills required for everyday functioning, such as using the telephone or following directions.[5] Approximately 86 percent scored below the minimum level on the reading test. These students would have difficulties filling out a simple job application form or reading basic warning signs.[6]

The influx of new students resulting from IRCA have already had a tremendous impact on the providers of basic skills services. Beyond meeting the basic legalization requirements, it is likely that many of these adults will seek additional educational services to improve language proficiency and work skills -- resulting in increasing future demands on basic skills providers.

Libraries

The California State Library and the public libraries throughout California provide a number of adult learning services, primarily through the auspices of the California Literacy Campaign and Families for Literacy program. In 1990-91, the California Literacy Campaign will provide $3,063,000 in formal assistance for adult services to local libraries.

Through this program, funding has been provided to 81 of the state's 167 public libraries to conduct literacy training to marginally literate adults. In 1988-89, some 9,028 volunteer tutors served 10,470 adult learners and made approximately 6,100 referrals to other agencies. The CLC program was recently supplemented by the Families for Literacy program, which provides additional services to illiterate adults with children under five years of age.

Job Training Partnership Act

The Job Training Partnership Act provides a variety of training services to economically disadvantaged individuals and others facing serious barriers to obtaining employment. Primarily funded by the federal government, the dollars are channeled through the state and disbursed to 52 local Service Delivery Areas which administer the funds in accordance with federal and state guidelines.

The anticipated 1990-91 JTPA budget will be $279 million. Of this money, it is estimated that roughly $61.6 million will be spent on adult education services.[9] Those served by these funds are economically disadvantaged individuals and others facing serious barriers to employment. Special client populations specifically accorded priority by JTPA include AFDC work registrants, GAIN clients, youths, older workers, dislocated workers and veterans.

Employment Training Panel

This unique program is funded by California employers who pay .01 percent of the first $7,000 of employee payroll tax for the hiring and training of workers drawing unemployment insurance or the retraining of employees who are likely to lose their job because of technological obsolescence. The panel spends $55 million annually on training and noncredit education. Under current funding levels, this program is expected to train approximately 40,000 workers a year. However, approximately $4.5 million will be spent specifically on improving the basic skills of 1,600 trainees.[10]

Division of Apprenticeship Standards

The apprenticeship system -- practical, on-the-job training correlated with academic instruction -- provides an efficient, cost-effective method for public and private sector employers to use in getting the skilled industry

trained employees they need. Career training is available in over 400 occupations for anyone having a high school diploma or the equivalent.

Apprenticeship training is designed through cooperative efforts of industry and government. Programs are funded and administered primarily by industry.

California has achieved the greatest apprenticeship participation of any state in terms of numbers of apprentices and registered programs. At the end of an apprenticeship, the State awards a Certificate of Completion which is recognized throughout the industry as a valid indicator of high-quality training.

The Department of Industrial Relations, Division of Apprenticeship Standards, receives $164,000 in federal funds and $5,834,000 in state funds to promote, develop and provide consultative services to the apprenticeship program. Currently, over 50,000 active apprentices and trainees are participating in programs. Over 31 percent of the apprentices are minorities and over 10 percent are women.

California Department of Corrections

The director of the Department of Corrections is required to establish classes for inmates. Recent legislation mandates that literacy training be available to at least 25 percent of eligible inmates by July 1, 1991 and at least 60 percent by 1996. Further, the legislation mandates that the department ensure that upon parole inmates are able to achieve a ninth grade reading level.

In September 1990, an estimated 15,000 inmates (16 percent of the total prison population of 94,000) participated in educational programs, including vocational and academic training.[11] In 1989, the California Department of Corrections spent $58.6 million on educational services.

California Youth Authority

The California Youth Authority provides juvenile offenders with educational opportunities through academic and vocational programs. Many of the CYA programs are similar to those found in a typical high school. College-level courses and vocational education classes are available for high school graduates.

In 1990-91 an estimated $30.8 million will be spent on educational services.[12] The department estimates that out of a population of 8,273 juvenile offenders, approximately 6,000 (at any given time) will receive educational services. The number of "special needs" enrollees in the CYA programs is growing. Approximately one-quarter receive remedial education services. Over 1,000 youths need special education services -- a number that is increasing - and 500 or more enrollees need help with English language skills.

County Jails

For inmates in many county jails, no educational programs are available. According to a 1989 study, nine school districts receive the majority educational monies, the preponderance of these is used to provide services to Los Angeles County jails. In 1990-91, the Board of Corrections estimates that $5.7 million will be spent on education in county jails.[13]

California Conservation Corps

The Corps is a state-funded program in which youths, ages 18-23, work to protect and improve California's natural resources, while receiving employment training and education. Training and education include basic skills education, ESL, GED, vocational education and general education. In 1990-91, approximately $640,000 will be spent on direct educational services for 1,825 corps members.[14]

California Literacy, Inc. and Literacy Volunteers of America

California Literacy, Inc. and Literacy Volunteers of America are the two largest statewide nonprofit providers of literacy services. In total, 24,534 literacy students worked with 14,285 tutors in 1988-89. Both programs provide training for literacy program staff, literacy trainers, and volunteer tutors. Services provided include basic reading and English-as-a-Second Language.

Summary. Though, as noted, the figures must be considered with great caution, altogether, in 1990-91 it appears that the workforce literacy delivery system outlined in Table 4 will serve at least some 600,000 adults at a cost of close to $750-$850 million dollars. As will be noted below, there is little information regarding what is achieved by whom in these programs. No one state department carries overall responsiblity for these programs, and there is no authority that provides oversight to the total array of programs.

Intergenerational Programs

Programs related to "intergenerational" or "family" literacy were not included in the program literature initially reviewed by the task force. Because of the importance of the primary care givers education to the future learning potential of the child, this population has been identified as being strongly in need of literacy services.

In a paper prepared for the Task Force it was noted that "the mother's education is one of the most important determinants of school participation and achievement" (of the child).[22] The paper quotes research to suggest that more highly educated parents produce children who are better prepared for school and who have greater oral language skills and higher literacy levels than the children of parents with lower education levels.

The following programs serve at-risk children. However, many of the benefits are realized by the entire family. By including literacy services to adults, the programs have the potential to provide a degree of intergenerational transfer of cognitive skills.

Families for Literacy

Currently, "Families" is the only state-funded program developed specifically to break the cycle of illiteracy by teaching parents and children together. Literacy skills services are provided to parents with children under the age of five. Together, the parent and the child participate in storytelling, "lap-sits," and reading games. Separately, the parents are taught basic reading and writing skills and discuss basic health and parenting skills. In 1988-89 (the first full year of the program), $700,000 in funding enabled 21 libraries to offer the program to 870 families.

Even Start

Even Start is a federally funded program supporting projects linking early childhood education with adult education to help disadvantaged parents prepare and assist their children in school. Two demonstration grants were awarded to California by the U.S. Department of Education for 1990. The grants may be continued annually for four years. Healdsburg Union High School District was awarded a grant of $504,717. Gilroy Unified School District received a grant of $214,218.

Head Start

Project Head Start is a federally funded program that includes four major components to preschool disadvantaged children: education to foster intellectual, social and emotional growth; comprehensive health care programs; parent involvement in child education, and social services to assist families to assess their needs. In fiscal year 1989, the U.S. Department of Health funded 53 state grantees at a cost of $114.6 million. These monies provided services to 35,833 children from low-income families in California.

Child Development Division

The Child Development Division of the California Department of Education funds a variety of subsidized child care development services. This program is targeted to serve families on welfare, those with limited incomes, homeless families, and abused or neglected children. The family must demonstrate that it needs child care. Most children served are aged two through six and almost all are under the age of 10. In 1989-90, $346.8 million was spent on services to an estimated 120,000 children.

Compensatory Education

Local school districts receive additional state and federal funds to provide special programs to children who are educationally disadvantaged due to poverty, language barriers or cultural differences, or who experience learning difficulties in specific areas. These programs serve students from preschool to age 21. In 1990-91, estimated spending for these programs will total $794 million.

Summary. Altogether, the programs reviewed above are spending some $1.3 billion dollars on remedial, education intervention to help at-risk children overcome the poverty and typical undereducation of their parents. This is 40 percent more than is spent in the programs summarized in Table 4 that aim at improving the literacy levels of youth and adults, many of whom are or will become parents of children who, in turn, will receive one or more of the compensatory education programs reviewed.

Given the positive relationship of parent's education level to their children's participation and achievement in school, it seems likely that a greater allocation of the childhood program funds to the education of the children's parents, as in the Family Literacy and Even Start programs, will provide a more cost-beneficial return. Monies spent in educating parents may pay dividends by having the parent's educational achievement influence the achievement of their children. This way, both adults and their children benefit from the same funds.

Barriers to Workforce Learning

Study of the delivery system for workforce literacy revealed five major barriers to participation and achievement in youth and adult literacy programs. These include the lack of program coordination, inadequate funding for programs, lack of program accountability, employer-related problems, and employee-related problems.

Lack of Program Coordination

Studies reviewed by the task force concluded that the diversity of the state's literacy programs are appropriate given the diversity of the state. However, they also concluded that a very diverse system can lead to fragmentation, lack of coordination, and duplication of effort.

The Task Force echoes these findings. Currently, there are a number of mechanisms -- both locally and statewide -- that could serve to increase coordination between programs. However, none are specific to the issue of life-long adult learning.

Inadequate Funding for Programs

In nearly every program identified by the Task Force, inadequate funding was mentioned as a significant barrier to delivery of services. Most often discussed were the need to "lift the cap" on growth and funding for adult schools and community college noncredit programs, the inadequate dollars for English as a Second Language education, the underfunding of services to the inmate populations of the State corrections facilities, and the inadequate and uncertain funding for the California libraries.

Prior to the passage of Proposition 13 in 1978 -- the tax reduction measure that drastically reduced revenues to schools and local governments -- adult and noncredit education were local programs funded by local property taxes, determined and implemented by local district boards.

Lifting the Cap. After the passage of Proposition 13 in 1978, the state enacted legislation which provided a permanent funding source for K-12 school districts and community colleges. As part of the Proposition 13 "bailout," only those K-12 school districts already providing adult education were allowed to continue the provision of services. Regardless of the changing demographics of an area, expansion of adult school services to new districts is statutorily prohibited. Community colleges have no such prohibition and may expand programs, based upon district and board approval.

However, the growth restrictions upon adult schools also restrict access by limiting expansion. In the adult schools, the growth of average daily attendance (ADA) is limited to the level funded in fiscal year 1980-81 plus a 2.5 percent annual "cap." In 1985 the automatic "cap" growth was stopped and now a district desiring to increase ADA must apply to the Department of Education for supplemental set-aside funds.

Growth in community college state-funded enrollment is also limited. For both credit and noncredit instruction, the growth is limited to the percentage change in the adult population of the districts, with a minimum annual growth of 1 percent or 100 ADA.

However, community colleges have more flexibility than adult schools simply because their "cap" is population sensitive. Additionally, community colleges have the ability to balance growth between credit and noncredit instruction, since the cap is on total ADA.[15]

CPEC has identified five basic problems related to the limitations imposed by the cap:

1. For school districts with very small pre-1981 ADA, but where population has grown dramatically, the 2.5 percent growth limitation may be seriously insufficient to meet local need.

2. In regions with particular high need and demand, programs frequently operate "over cap," meaning the local districts are not reimbursed by the state for all services provided.

3. Because of funding limitations, high-demand courses, such as ESL, may have extremely large classes -- limiting effectiveness and discouraging students from continuing their schooling.

4. Limited access "may restrict opportunities to use up-to-date equipment or even prevent introduction of up-to-date technology in vocational education."

5. Rural areas are particularly hard-hit by limited access. First, some have no adult and noncredit programs at all. Second, existing programs may have been so small in 1981, that the 2.5 percent cap on ADA results in a virtual "no-growth" policy.

IRCA-Related Services. Beyond the need for the most basic amnesty classes is the ongoing educational needs of new residents "legalized" by the Immigration Reform Control Act. As reported earlier, early data indicates that nearly 90 percent of students scored below the minimum competency levels on required CASAS tests. As CASAS notes, "the amnesty population is in need of education services which will not only facilitate the transition from temporary to permanent residence and U.S. citizenship, but also will provide the opportunity for continued upgrading of English and employment skills to assist these new residents to more fully participate in the economic mainstream and political process."[16] The continued influx of these new citizens into the system will increase funding pressures for all adult education services.

Underfunding of Services to Inmate Population. SB 949 of 1989 (Chapter 989 of 1989) mandates that at least 25 percent of eligible inmates receive literacy instruction by July, 1991, and at least 60 percent receive literacy instruction by 1996. Further, the legislation mandates the Department of Corrections to ensure that, upon parole, inmates reading at a ninth-grade level.

If an earlier survey by the department is applied to the projected growth in the skyrocketing prison population, by 1994-95 78,300 inmates will need varying degrees of literacy services to bring them up to ninth grade reading level. Currently, 15,000 inmates are enrolled in the correctional education system. In order to provide services to an additional 63,300 inmates, the size of Corrections' educational system must be dramatically increased.

In a working paper prepared for the task force, Corrections estimated that to meet the "25 percent" deadline of July 1, 1991, the total number of teachers necessary to provide the mandated level of instruction will be 125. To accommodate the "60 percent" deadline, over 650 teachers will be necessary.[17]

The Department of Corrections has initiated a project to develop a multi-year Master Plan for Correctional Education. While the department will give "careful consideration to all aspects of the current system. . . (including) administration and organizational structure, policies surrounding correctional education and its delivery, program development issues and program integration alternatives," it is clear that additional funding to meet the mandates provided in SB 949 is urgently needed.

Libraries Face Severe Funding Crisis. California's libraries are one of the primary providers of literacy services. The majority of local programs receive funding for tutor training, outreach, materials, and administration through the California Literacy Campaign (CLC).

In 1990-91, CLC statewide spending will total approximately $4 million. However, continued state funding for this program is in jeopardy.

Accountability is Lacking in Many Programs

In 1988 CPEC criticized both adult schools and community colleges for a lack of program accountability. Partially, CPEC attributed the lack of accountability to inadequate program data. Noting that although adult and noncredit education programs have been state-funded for a decade, "districts have not been required to report much information about courses, categories, or students. . .the scarcity and inadequacy of data plagues examination of many aspects of adult and noncredit education in California."[18] In addition, CPEC contends that "the benefits of adult education are often assumed, but rarely assessed. The only quantitative information is limited to those students who complete the high school diploma or the GED."[19] Further, CPEC contends that the data that are available are often not compatible between providers.

Data that are available indicate that there is room for much improvement in literacy programs. For instance, a number of the State Department of Education's Adult Basic Education programs use the Comprehensive Adult Student Assessment System (CASAS) set of tests to measure students literacy skills before and after training. Data for a six year period show that students tend to enter programs reading at the 6.5 grade level and leave at the end of 80 to 100 hours reading at the 7.5 grade level, far short of the 9th grade level associated with greater productivity in the military studies reviewed in discussing the "literacy gap.".[22]

In order for the state to justify the millions of dollars spent annually on adult educational services, CPEC argues that the benefits of adult education must be substantiated.

CPEC also criticized the adult education system for a lack of clear definitions regarding the designation of courses. Because of the lack of definitions, many courses can fall into more than one authorized category. Another concern raised by CPEC is the lack of adequate program review. While schools that receive federal funds are supposed to be reviewed every

three years, the Commission found exceptions in implementation of this requirement. Further, according to CPEC, districts that do not receive federal aid and community college districts are not subject to the three-year audit. Vocational education classes are, by law, reviewed every two years.

While not delineating specific problems, the Strategic Plan for Adult Education implicitly acknowledges the existence of these issues by making recommendations to improve accountability. The report states that "programs should explicitly define what they intend to accomplish and document achievements with reliable, comparable, and objective information."[20]

The Employers

While there are many efforts underway to promote literacy training through state-assisted programs, California employers must also share in the burden of increasing and improving workplace learning. Current estimates reveal that employers, nationwide, spend less than 2 percent of payroll on education and training, with only a very small part of that devoted to nonmanagement employees.

There are a number of overall barriers to employers providing workplace training, including: Employees using new skills to find new and better jobs; employees may be pirated away by competing employers who don't provide training; a substantial portion of the benefits from training programs accrue to the economy as a whole -- not just the employers, and training programs are often expensive, both in terms of development and implementation.

Many employers acknowledge that the admission of a serious literacy problem could negatively impact the image and reputation of their business. While some employers do not acknowledge that illiteracy is a problem within their organization, others may admit to a problem but have no method of assessing the scope of the problem or measuring the need for literacy skills training. Furthermore, many employers may be hard pressed to find a training program that is tailored to the needs of their workplace.

The Employee

Workers who need basic skills education and training are confronted with many barriers. They are embarrassed to expose their problem of illiteracy, and fear the loss of job by admitting that they are in need of assistance. Workers also face barriers when attempting to upgrade skills after-hours and on weekends. Juggling work, commuting, family responsibilities and neighborhood attitudes, workers are often too tired and discouraged to attend basic skills programs that take place off-site and after hours. The educational system has failed them before and they fear failure again. Many workers see little if any reward for the additional time and effort they would have to expend in upgrading their skills. Perhaps one of the greatest barriers is that many workers in need of basic skills training do not recognize that they have a literacy problem.

Summary

In summary, the Task Force identified a number of problems with the current workforce literacy delivery system:

Lack of a clear state policy coupled with a lack of program coordination.

Underfunded programs that are limited in their ability to expand.

Separation of adult and childhood education programs aimed at common goals, i.e. breaking the cycles of marginal literacy and marginal living.

Low levels of training dollars spent by employers on improving the basic skills of workers.

Fear of workplace discrimination on behalf of illiterate or non-English speaking workers.

The following section discusses these and other issues and makes recommendations to the Legislature to improve the delivery and quality of basic skills programs to California's non-college bound citizens.

Footnotes

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[4] *Ibid.*, p.22.

[5] *Ibid.*, p.43.

[6] *Ibid.*

[7] Methodology from: Barry Stern. (1989). *The California Adult Education System: Background Paper on the Response of Adult Education Institutions to the Needs of Californians*. Paper prepared for the California Department of Education. Sacramento, CA: p.14.

[8] Office of the Legislative Analyst. (1990, March). *Analysis of the 1990-91 Budget Act*. Sacramento, CA.

[9] Methodology from Barry Stern. (1989). Pacific Management and Research Associates, Sacramento, CA, who acknowledges that the methodology is very rough.

[10] Employment Training Panel program data.

[11] California Department of Corrections.

[12] Office of Legislative Analyst, pp.819, 831.

[13] *Ibid.*, p.838.

[14] California Conservation Corps.

[15] California Postsecondary Education (CPEC) Institution. (1988). *Meeting California's Adult Education Needs*. Sacramento, CA: p.19.

[16] CASAS, pp.50-51.

[17] California Department of Corrections. (1990). *The California Adult Inmate Literacy Issue*. Sacramento, CA: Paper prepared for the California Workforce Literacy Task Force.

[18] CPEC, p.23.

[19] *Ibid.*, p.24.

[20] 1988-89 Adult Education Advisory Committee. (1989). *Adult Education for the 21st Century: Strategic Plan to Meet California's Long-Term Adult Education Needs.* Sacramento, CA: Paper for the California State Department of Education, p.53.

[21] Sources: Legislative Analyst, *Analysis of 1990-91 Budget Bill;* Employment Training Panel; California Department of Corrections; California Youth Authority; California Board of Corrections; California Conservation Corps; California Literacy, Inc.,and Literacy Volunteers of America.

Additional notes for Table 4:

(a) Based on methodology employed by Barry Stern in *The California Adult Education System: Background Paper on the Response of Adult Education Institutions to the Needs of Californians.* Stern assumed 40 percent of ROC/P enrollees are out of high school. Enrollment number is based on 40 percent of 1988-89 total enrollment.

(b) Estimate of numbers served in 1988-89. Dollar amounts are for 1990-91. Source: California Literacy Campaign.

(c) Based on Stern's rough methodology of JTPA spending on remedial and noncredit education. Same methodology applied to numbers served of total JTPA participants.

(d) Based on contracts approved in 1989-90 for 1990-91 fiscal year that specifically contain ESL or remedial education component.

(e) Dollars and numbers from 1988-89. Source: Barry Stern. (1989). *Baseline Study: Education in County Jails.* Sacramento, CA: Paper prepared for the California Department of Education.

(f) Based on Stern's estimates of percent of resources allocated to remedial and noncredit education.

(g) Expenditures vary greatly from program to program. Numbers served include both literacy and ESL services. These figures do not include California Literacy Campaign programs. Source: California Literacy, Inc. Training Report, July 1988-89.

(h) Expenditures vary greatly from program to program. The figure is based on estimates that approximately half of Literacy Volunteers of America programs are linked to California Literacy Campaign programs.

[22] Thomas G. Sticht. (1990, April). *Strategies for Evaluating the eEfectiveness of Adult Literacy Programs.* Harrisburg, PA: Paper presented at the National Conference on State Literacy Initiatives, III, National Governor's Association.

Findings and Recommendations

In its studies, the Task Force focused on the "literacy gap" and delivery system issues discussed earlier. Additionally, however, a number of other issues were studied that relate to the overall mission of the Task Force. This section brings together the studies of the "literacy gap" and delivery system with the results of these additional analyses and presents a comprehensive statement of needs identified by the Task Force, the findings related to these needs, and recommendations aimed at meeting the needs.

A Life-Cycle, Intergenerational Perspective

The Task Force recommendations are organized by an understanding that to effectively bring about the improvement of workforce literacy and other skills for the next century, a "quick-fix" will not work. Rather, an approach is needed that takes a long term view of the life cycle and deals with (1) the current workforce of youth and adults who are out of school and hence not subject to the influences of public school reforms, are mostly employed, and who will constitute three-quarters of the workforce of the year 2000; (2) the up-and-coming workforce comprised of teenagers who may be considering dropping out of school, who may become teen parents, or who leave school intending to go directly into the world of work and do not anticipate going to college; and (3) the pre-school and primary grade school chiildren who will comprise the workforce of a generation from now.

While the Task Force is not concerned with public school reform *per se*, our recommendations are premised on the belief that the best "head start," "compensatory education," or other form of intervention aimed at improving the ability of children from poverty to cope with, achieve in, and complete the public school system is a well-educated parent or other caregiver. From this point of view, an investment in the education of adults can produce "double duty dollars:" it can improve the education of adults and the educability of their children. In this way, both the productivity of the workplace and the productivity of the public schools may be increased.

Need For A Master Plan for the Education and Training of Underserved Youth and Adults

Findings:

More than 50 percent of California's youth and adults are not seeking higher education.

A large number of Californians (estimated at over 7 million) have educationally developed skills below the ninth grade level, and many are in need of English language training.

State provided literacy programs cannot meet the present demands for services, yet a majority of those who could benefit from additional education are not being reached, and of those who are served most drop out without increasing their skills to the ninth grade level.

There are over a thousand adult education and training program providers now operating in California in an uncoordinated and underevaluated manner.

Unlike the Master Plan for Higher Education, there is no Master Plan for the education of non-college bound youth and adults in California that integrates the roles of local, state and federal agencies; businesses and industries; workers unions; community-based organizations; library related services and the formal secondary and postsecondary institutions.

Discussion

Since 1902, when the California Constitution was amended to assure support for secondary schools, there has been a growing history of legislative efforts and accomplishments that form the basis of existing policies for adult education. Until the passage of Proposition 13 in 1978, adult education was funded by local property taxes with the control and direction determined by local district boards. The State provided only limited fiscal support.

Following the passage of Proposition 13, the Governor and the Legislature became responsible for setting the policies and funding of adult education. Unfortunately, this responsibility was thrust upon them without the guidance of any controlling policies.

The absence of any overall state policy adversely affects the education and training of California's non-college bound youth and adults. The delivery system is fragmented, it lacks acceptable assessment tools and accountability, and it provides no conclusive evidence of being able to effectively meet the needs for adult education and training of the workforce. The California Postsecondary Education Commission found that, "...overall, cooperation between local adult schools and community colleges (the two major providers) can be described as serendipitous. Misunderstandings, competition, and non-cooperation between some districts limit available service and detract from the purpose of adult and non-credit education."[1]

The California Department of Education, Adult Education Unit has adopted a fourteen point program that is intended to respond to the shortcomings of the state's adult education delivery system.[2] The plan is directed to the adult schools and other adult service providers funded by the State Department of Education, and also considers how adult schools might collaborate with other educational providers to service the needs of the State and its population.

While this plan focuses on data about educational needs and the mechanics of meeting those needs, it does not adequately address the more pressing need of developing a delivery system that deals with the present workforce's non-college bound adults, youth transitioning from school to work, and prevention programs that integrate adult and children's education to achieve necessary levels of intellectual skills when they reach adulthood. Furthermore, successful implementation of the program will require a spirit of cooperation and commitment among key stakeholders, but in the absence of leadership from the Legislature or Governor's office, overcoming recognized attitudes of defensiveness and polarization among executive agencies may be ultimate roadblocks to achieving the plan.[3]

If California is to meet the education and training needs of its present and future workforce, it is incumbent on the Governor and the Legislature to develop a plan for a comprehensive and accountable delivery system. While one or more state agency providers may seek the responsibility for developing a plan, workforce education and training is much broader than the scope of any one agency. Policy analysts studying adult literacy have note "...it is unrealistic to select any one of those agencies to perform planning and coordination functions. The best approach would be to place responsibility for those functions with the state governors and allow them to sort out how the responsibility should be exercised in their respective states "[3]

> **Recommendation 1: That the Legislature, in conjunction with the Governor, appoint a Commission, for a term of five years, to prepare and implement a Master Plan for Workforce Education and Training of California's underserved, non-college bound youth and adults.**

The Master Plan should establish the foundation for the Governor and the Legislature to formulate effective policies and programs for lifelong education and training of non-college bound youth and adults well into the 21st Century.

The Master Plan should integrate the roles of local, state and federal agencies, businesses and industries, labor, community-based organizations, public library services and the formal secondary and post-secondary educational institutions. In developing the Master Plan, the Commission should take into consideration any existing formal plans and programs of state agency providers. Subsequent recommendations of the Task Force should be incorporated into the plan.

Need to Adequately Fund the Delivery System for Adult Literacy Education and Training

Findings:

Most of the population in need of literacy and other cognitive skills development are not being reached and served by the current delivery system.

Many in need do not participate for a variety of reasons: They do not accept that they have a skills problem or are fearful or embarrassed to reveal it. The demands of work and family, or neighborhood attitudes create barriers. Many have negative feelings about classroom learning and the times and locations for learning are often not reasonably convenient.The perceived lack of any rewards or benefits offer little incentive for many in need of improving their skills.

Current state policies limit the funding for adult education and restrict the opportunities for non-college bound youth and adults to obtain education and training.

Discussion

The issue of funding adult and workforce education in California has been analyzed by the California Postsecondary Education Commission.[1] With the passage of Proposition 13 and the transfer of funding from local to state responsibility, adult and non-credit education has to compete with other education demands for scarce state resources, and it also has to meet the state's needs for accountability and cost containment.

According to the Commission, "the Governor and the Legislature have repeatedly tried to bring closure to the issue, but although they have made progress, the essential problem of funding, competition among providers, lack of availability of needed services, and new pressures to serve new communities, have continued. This history threatens to bring to a halt improvements in state policy for adult education at a time when meeting the immediate and legitimate educational needs of adult Californians requires coordinated state-level action on these problems (p.1)." [1]

The problems that California faces in the education of its workforce will be exacerbated by the projected growth in population and the changing demographics. According to the Center for Continuing Study of the California Economy, over 3.6 million working age adults will be added to the population between 1988 and 2000 (p. 4). [4] During this same period, over 3.3 million migrants will contribute to California's population growth.[4]

Access to language, literacy and basic skills programs provided by adult and community college non-credit education is restricted by growth limitations and funding. Because of state policy, some areas of California are not served by any adult or non-credit education providers (p.3).[1] Added to this are the significant increase in demands for adult education made by the Greater Avenues for Independence (GAIN) welfare program, which requires increased employment and training services for recipients of aid to families of dependent children, and the Immigration Reform and Control Act (IRCA), which funds immigrant education in civics, English and literacy (p. 41).[2]

By far the largest demand for adult basic language and literacy education services comes from California's large immigrant and refugee population who enroll in English-as-a-Second Language (ESL) courses. As a portion of average daily attendance (ADA) in these basic skills courses, in 1988 ESL programs in the adult schools generated 89 percent of the total, while in the community colleges in 1987, demand for ESL education generated 81 percent of the total ADA (p.42).[2] Indeed, the demand for ESL instruction is limiting the availability of basic skills and other educational programs.

> **Recommendation 2: That the Legislature remove the prohibition against the offering of adult education by communities that now cannot do so because they did not have programs in place before Proposition 13; further that the Legislature provide additional funding for adult English-as-a-Second Language (ESL) and basic skills programs to realistically reflect the need for these services.**

Need for Incentives to Increase Workplace Education and Learning

Findings:

The current adult education system does not include significant involvement of business and industry in workforce education and training for non-college bound youth and adults, yet the workplace is where most of those in need are found.

Most California businesses provide few educational opportunities for workers below the management level.

Many businesses and industries in California are now employing workers whose skills are below the ninth grade level and whose productivity is not as great as it should be.

Many workers unions have members in need of additional training in job skills and intellectual skills developed through education (reading, writing, arithmetic, reasoning, problem solving).

Discussion

Most basic skills education and training of the workforce has been devoted to those hard-to-serve adults who lack the skills necessary to find gainful employment. This focus has meant that those working adults in need of functional skills training have not been adequately served. This has led to a growing interest and emphasis on the part of federal and state agencies and community-based organizations to provide basic skills training for the workplace. While there have been some recent successful efforts to promote training through state-assisted, employer-specific programs, including California's Employment Training Panel program, the principal challenge for increasing and improving workplace learning lies with American employers (p.49).[5]

How much training should the nation's employers provide? The training needs of each employer are different and no single level of commitment to training is appropriate for all employers. A study by the bipartisan Commission on the Skills of the American Workforce noted that, although a few U.S. companies come close to spending 1 percent of payroll on training, West German companies already are required to spend 3.5 percent, Swedish companies pay 2.5 percent and the governments of Singapore and Ireland require a 1 percent spending level.[6]

Of the estimated $30 billion that U.S. businesses spend on employee training, only 7 percent reaches front-line workers. Moreover, anecdotal evidence suggests that most workplace training systems are weak,[5] and workplace basic skills programs are likely to be weak, too. For example, an American Management Association (AMA) report on workplace basic skills training found that most remedial training of employees is done by outside providers, rather than in-house staff.[7] The experts that were consulted by the AMA "...felt strongly that successful training must be immediately applicable to the jobs that trainees perform, and that training modules should be tailored to the specific needs of the employee. The fact that 63 percent of remedial training programs are administered exclusively by outside providers gives evidence that even where training is provided, it may not prove successful ."[7]

The failure of employers to embrace education and training is the missing link in the nation's human capital development system. This, in turn, results in weak linkages between employers and education institutions, limiting the development of workplace learning and of skilled educators and trainers.

Improving workplace learning will require both private and public efforts. Not all employers, particularly small and medium sized businesses, can afford such investment without some help from government. In addition, policies are needed that will increase the demand for workplace learning. Government should share with employers the cost of development and delivery of employer training, as is done by the California Community Colleges' ED>Net program that is providing a growing array of education and training programs for small and medium sized businesses.

California needs to develop policies that will increase the commitment of employers to workplace learning and also to increase the quality of training that is supplied. Although all California employers are required to pay 0.1 percent of the first $7,000 of employee payroll into the Employment Training Panel (ETP) fund, few employers meet the restrictive requirements of the ETP that would enable them to apply for training funds.

California needs to develop a policy and delivery system that would enable all employers to provide for lifelong education and training of their workers. Requiring employers to raise the level of investment in their human resources would encourage responsive adaptation to economic and technological change, which is essential to compete in todays international marketplace.

<u>Recommendation 3</u>: That the Legislature adopt policies providing incentivies for California employers, above a certain level of employment, to invest a minimum of one percent of employee payroll to establish a formal program of education and training of non-management employees.

In the case of small and medium sized businesses, where it is not feasible to establish individual programs, approved training programs could be achieved through a consortia of businesses or in cooperation with the community college's ED>Net program. Included in employer training could be pre- or post-employment training of job applicants with deficient skills to raise their skills to acceptable levels.

Need for Education and Training In The Public Sector

Finding:

State and local government agencies in California have failed to recognize and address the need for workforce education and training in public sector work-settings.

The State, by its leadership and example, should encourage all local governmental agencies to adopt a system of education and training for their own workforce.

Discussion

The problems and needs of business and industry for a more literate workforce have been well documented. However, with the exception of the military, little attention has been paid to workforce literacy in public sector work-settings. This is a serious oversight given that, in 1988, state and local governments in the nation employed 9,244,291 persons. In some cities, counties and states, the public sector is the largest employer of women and minorities (p.3).[8]

At the city level of government, Dallas has an intensive, long-range and comprehensive program and has invested heavily in the issue of workforce literacy. The city government has developed an extensive set of goals to be achieved over a five-year period. It completed an educational survey for every employee, by department, position, and race/ethnicity. Work-content related training needs for the entire workforce were identified, as were General Education Development (GED), high-school completion needs.

In California, the California State Library has held a series of meetings for state government training officers. The participants voiced their concerns about the state workforce, stating that illiteracy is not just a problem for low-level and entry-level workers -- it is also a problem at the managerial level. The participants acknowledged that illiteracy is hard to deal with because it means admitting that hiring and training practices are not perfect.

But beyond these verbal expressions of concern, public sector involvement in the education and training of non-college bound, undereducated youth and adults has yet to flourish in California.

> **<u>Recommendation 4</u>: That the Legislature and the Governor adopt policies to establish a system of basic skills training in state government to permit job applicants with basic skills deficiencies to qualify for entry level work, and provide continuing education to permit underqualified workers to attain the skills needed to move upward.**

Need for Skills in English Language and Literacy: A California Priority for Adult Education and Training

Finding:

> Many adult literacy learners in California's workplaces feel discriminated against for speaking a language other than English, and they are reluctant to attend language and literacy classes for fear of reprisals by employers.
>
> Educators have not adequately determined the problems and effects of proficiency in a native language in the learning of English-as-a-Second Language.

Discussion

Because of the growing importance to California's workforce of the millions of speakers of native languages other than English, no workforce literacy policy can expect to be effective that does not address the specific concerns of non-English speaking adults. Two major concerns were brought to the attention of the Task Force.

First, in surveys of adult learners by Task Force member Enrique Ramirez many speakers of native languages other than English reported that they had been discriminated against for speaking a non-English language on the job. Many were afraid of attending English language or literacy classes because they thought their supervisors would dismiss them as not competent.

Second, growth of the California labor force will reflect, more and more, the immigration of persons from other nations, many of whom will have limited or no English speaking ability and may be semi-literate or non-literate in their native language. The question of the lack of native language literacy on learning English as a Second Language in order to function effectively in the workforce and the workplace was brought to the attention of the Task Force by member William Melendez.[21]

There appears to be a growing body of opinion, but little in the way of published research to support the belief that developing literacy first in the native language is essential for learning English, in both oral and written forms, as a second language. A literature search for the Task Force by Dr. Jodi Crandall, Director of the National Clearinghouse for Literacy Education, revealed only two studies that have been published on native language literacy. Neither study arrived at any definitive conclusions. The California Association for Bilingual Education published two studies relating to K-12 learning and native language literacy, but nothing concerned with adult ESL education.

In an effort to further learn what may be known about the issue, to discover if any research is being pursued and to initiate an ongoing dialogue, a meeting of specialists was convened by Task Force member Antonia Hernandez, president of the Mexican American Legal Defense and Educational Fund (MALDEF). At that meeting it was agreed that literacy includes all reading and writing for meaningful purposes. Consensus was reached that (1) a policy framework regarding English as a Second Language should be comprehensive: all school-age children, adolescents and adults who are not literate should become literate, and (2) native language literacy for all, whether in English or not, should be promoted as state policy.

> **Recommendation 5: That the Legislature and Governor develop policies of non-discrimination against non-English speakers and non-literates in the workplace and further that they provide for research to further guide state policies regarding the development of English literacy among limited-English proficient adults, with attention to the effectiveness of native language literacy instruction on second language acquisition.**

Need to Use Technology To Enhance Adult Learning

Findings:

California has failed to capitalize on the use of technology in adult education and training that could cost-effectively expand the capacity of the literacy delivery system.

Many workplace literacy programs find that the use of computers motivates employees to participate in programs.

Discussion

Recent publications have called attention to the potential contribution of technology to teaching and learning. The computer, telecommunications media, laserdisks, computer compact disk, and various combinations of these and other technologies offer unprecedented opportunities for enhanced learning. [16] The new technologies can alleviate barriers of distance, disability, language, age and economic condition.

A California Postsecondary Education Commission (CPEC) report cites the significant activity that many states have undertaken in planning and organizing for the increased use of technology in education (p. 29).[16] New York is providing high school courses to rural areas through a distance learning system. Oregon's Ed>Net system provides instruction by telecommunications to learners throughout the state in libraries, hospitals, factories, state agencies, and businesses, as well as to educational institutions. North Carolina, New York and Massachusetts have developed statewide plans for the use of technology in public schools.

"Although most California students still find themselves in decidedly low-tech, traditional classroom surroundings in which print and formal lecture are the principal means of instruction, some California educators and institutions have enthusiastically embraced new educational philosophies which include the use of technology (p. 17)."[16]

While other states are making strides in the use of technology in education, there is a relative absence of such activity in California whether one considers the K-12, post-secondary, or adult education and training systems. It is ironic that California, the cradle of the technology revolution, is not on the leading edge of the use of technology in learning.

The use of technology in adult education and training offers some excellent opportunities to provide new approaches to learning. According to the California Postsecondary Education Commission study, the demand for English as a Second Language and basic skills courses at adult schools and community colleges is burgeoning and will continue to grow. "The use of technology to deliver instruction and to monitor and encourage individual progress needs to be considered seriously when developing ESL and basic skills adult and non-credit education programs." Since students participating in such courses are usually well motivated, use of computers may allow for quicker progress and more cost-effective delivery of instruction (p. 10).[16]

In a paper prepared for the Task Force, Jean Sharley Taylor describes the Los Angeles Times Learning Lab, which opened in 1987 with three purposes: To offer basic skills training to employees, to work with skid row and community agencies, and to demonstrate to educators and businesses the worth of cooperative teacher/computer training. The Lab has been credited with greatly raising the skills, establishing motivation and reestablishing the self-esteem needed to apply for jobs of many of the 200 people from the Rescue Mission who are training on the Labs computers.[22]

Examples were cited by Taylor of how computer training is being used in other states to upgrade the skills of employees. But cursory evidence suggests the use of computers in adult education has essentially been limited to those persons with skills below the fourth or fifth grade levels. Only recently, functional literacy software adapted from the military for higher skill level training of civilian employees has begun to be used.

The California Legislature has begun to move towards the development of State policies on educational technology. The Farr-Morgan-Quackenbush Educational Technology Act of 1989 (AB 1470) calls for the development, by 1992, of a state master plan for educational technology. In response to SB 1202 (Hart), the California Post-secondary Education Commission is required to develop a state policy on the use of distant learning technology.

Neither of these acts appear to include policy consideration of the use of technology in the education and training of non-college bound youth and adults. If California is to capitalize on the use of technology in the training of the workforce, then the intent of its policies must be broadened.

> **Recommendation 6: That the Legislature incorporate the development and use of technology for adult workforce education into any state policies and legislation on the use of educational technology in California's education system.**

Need for Workforce Education in the Transition From School To Work

Findings:

California does not have a well articulated education program to assist in the transition from school to work for non-college bound youth.

Many non-college bound youth and adults who do not have a high school diploma or the equivalent cannot take advantage of California's apprenticeship program.

Discussion

During the 1980's, a host of reports were issued critical of educational outcomes of students, prompting a series of reforms designed to respond to the criticisms and improve the outcomes. Charges were made of weak curriculum and instruction, inadequate student effort and poor performance of students in achievement tests, especially when compared with other countries. Many of the reports pointed to the unpreparedness of today's high school graduates for tomorrow's world of work. What was implied was the need for a strengthening of academic courses. Almost all states responded by mandating increases in academic course credits required for high school graduation, particularly in mathematics and science (p. 15).[9]

What has been the effect of these increased academic requirements on non-college bound students? "... in schools affected by the increased high school graduation requirements (those with a significant number of low- and middle-achieving students), about twenty-seven percent of students are taking an extra mathematics course and thirty-four percent an extra science course." [9] But some educators queried reported that:

> "For the non-college bound students, the requirements are, in all honesty, doing a poor job. ...The big disadvantage of the increased requirements is that there are no provisions for those students who cannot do well. There is no vocational track with remediation in the basics. ...They just don't address the needs of the kids not going to college. It's a real problem for those who just want to get a job after high school."[9]

Russell Rumberger, in a paper prepared for the Task Force, warns of the sizable and ominous gap that exists between what schools teach and what work requires. It is "...the gap between everyday, practical, real-world intelligence that is required in work and the academic, formal intelligence that is taught and measured in schools (p. 10)." [10] Rumberger points out "...that the kinds of skills that are taught, and the way that they are assessed are not compatible and may even be dysfunctional to the demands of work (p. 11)." He suggests that improving the workplace literacy levels of American workers may require that as much or more attention be payed to *what* is taught in schools as is paid to increasing the *amount* of material or learning that students achieve.

A Washington Post editorial of a decade ago made the statement: "In no other industrialized country are the transitions from school to work...left so much to chance as in the United States." Incredibly, little has changed since then. "Non-college bound youth who complete high school have been saddled with the thoughtless expectation that they will readily find their place and need not be of further concern to the larger society." (p. 4.) [11]

Like Rumberger, Barton points out that the nature of the transition to work problem stems, for the most part, from the gulf that separates the institutions of schools from those of work. "We even have difficulty talking about how best to help 'the non-college bound' as if it is a failure of the family and the school that they are going to work rather than continuing their education. We seem to fear that any special help we might give them may be perceived as tracking them away from college or as limiting their future in a society that excels in offering a pluralistic system of post-secondary education."[11]

A recent conference jointly sponsored by the Departments of Education and Labor focussed on the school-to-work transition; a signal regarding the growing concern over the future of the nation's non-college bound population. At this conference, the president of the National Center on Education and the Economy referred to the school-to-work transition in the United States as the "worst in the industrialized world." [12] He went on to note that educators and businessmen in most other developed countries assume joint responsibility for young people until they become established in the workplace. But in the United States, schools and employers leave young people to flounder from one unproductive job to the next. [12]

In California, the transition from school to work is grounded in the policy of "systematically and deliberately treating all students as if they are college bound."[13] The goal of the California Department of Education is to have 40 percent of the students who enter high school make the transition to work with skills that will enable them to succeed in the workforce (p. 4). [13] In order to ensure a high level of competence from graduates, the California Department of Education believes the business community should develop an incentive system which would give hiring preferences, training opportunities and higher wages based upon a set of criteria. "Recognizing and rewarding learning effort and achievement appears to be the key motivator for students." [13]

How well has the redesign of courses to deliver a rich, sophisticated curriculum to California's non-college bound youth succeeded in improving their transition from school to work? Unfortunately, no studies appear to have been done to learn the effectiveness of these policies or to determine what is the most appropriate means of developing a well articulated program of transition to work. While several career-vocational education programs are being pursued in various California schools, i.e. Toyota T-TEN, 2+2 high school and community college articulation programs, Partnership Academies, Jobs for American Graduates, they appear to offer learning opportunities to only a relatively few students. It appears that most of California's youth are still not receiving the education they deserve to adequately prepare them for the world of work.

One alternative is California's apprenticeship program -- practical on the job training correlated with academic instruction -- that has achieved the greatest participation of any state nationwide in terms of number of apprentices and registered programs. The Governor and the Legislature need to consider expanding this program to include more non-college bound youth and adults who may be appropriate candidates but lack the required educational attainment. In addition, this program may offer an effective deterrent to the school drop-out problem.

> **Recommendation 7: That the Legislature direct the Commission on the Master Plan for Workforce Education and Training to develop policies to increase the effectiveness of the transition from school to work by expanding the State's apprenticeship program.**

Need to Break The Cycles Of Marginal Literacy and Marginal Living

Findings:

The single highest correlate of children's persistence and achievement in school is parents', and especially mothers' education level.

Studies of pre-school and primary school compensatory education programs repeatedly emphasize the importance of parental involvement for the success of programs.

In California, more money is spent on the children of the poor trying to compensate for the parent's lack of education than is spent on parental education to prevent children's school learning and adaptation problems.

New federal laws are calling for integrating adult basic education with early childhood education and this calls for new education delivery systems and methods.

Discussion

Studies in both developed and developing countries have shown that parent's, and especially mother's, education is related to children's preschool language and literacy development.[14] Preschool cognitive development has strong effects on achievement in academic skills in schools, and these affects may persist into adulthood. Data for young adults in the United States show that the literacy skills of the workforce are influenced heavily by parent's education and one's own years of education.[14]

Despite numerous studies indicating that the education of parents, and especially mothers, can have a positive effect on the educational achievement of their children, it is only in the last few years that "family literacy" programs of adult education aimed at improving both parent's and their children's educational achievement have appeared.

In 1989, Secretary of Education Cavazos announced the award of $14.1 million in Even Start grants as a new program in Chapter 1 compensatory education. In California, the Heraldsburg Union School District received $504,717, and the Gilroy Unified School District received $214,218 for Even Start programs. In these programs, parents who are eligible for adult basic education are to receive literacy education along with their children in Chapter 1. Thus, the Even Start program unites adult literacy development with childrens literacy development.

The Family English Literacy Program (FELP) of the U.S. Department of Education helps limited-English-proficient adults and out-of-school youths achieve competence in English and gain parenting skills. Parents and their children learn together in FELP projects. Fourteen FELP projects, each funded at around $150,000 are located in California.

In July 1988, the Legislature created a program to coordinate literacy and preliteracy services to families that include illiterate adults and young children. An annual appropriation of $600,000 for the California Library system allows libraries to participate in the Families for Literacy Program in which parents are taught literacy in the context of learning about reading for and to their children. Some early evidence suggests that these parent and child education programs may instill positive attitudes toward and improved attendance at school by the adult's children.

Through the Department of Education's Compensatory Education Office, California spent over $528 million of federal and state funds in fiscal year 1988 on educationally disadvantaged youth. An estimated 1.9 million students in 6,150 schools were served. Since 1970, the Compensatory Education Office has provided workshops on parent involvement and parent training, but has not included the opportunity to address the educational needs of parents.

According to the Department of Education's Child Development Division, California has the best funded and most comprehensive child care and development system in the nation, comparable to that of all other states combined and surpasses many industrial nations. The Division spent $346.8 million in fiscal 1990 for an estimated 120,000 children who were from families on welfare, with limited income, or homeless, and abused or neglected. The Child Development Division provides parent education and career development for adolescent parents but has neglected or failed to recognize the opportunity to include education of adult parents in its programs.

The federally funded Project Head Start spent $114.6 million in fiscal 1989 in California to improve the educational attainment of 35,833 children from low income (and mostly undereducated) families. Although the program provides some parent training, the director of Region IX recognizes the need to provide adult basic education to parents but does not have available funds.

As "family literacy" or "intergenerational transfer" programs proliferate, spurred by the new Even Start legislation, special attention should be given to the definitions of cognitive or intellectual abilities to be developed, and the need to assess the actual transfer of cognitive ability from parents to children. The latter is especially important to document the mechanisms by means of which "double duty dollars" can be obtained by having the parent's new knowledge and skills transfer to more than one child.

Task Force member Antonia Hernandez reported that the California Department of Education estimates that 750,000 (16 percent) of the State's 4.8 million K-12 population are limited-English proficient (LEP). In nearly all of these families, the parents are limited-English proficient as well. Native language literacy is, perhaps, most crucial among families where both the parents and children do not speak English. It is among these families where complete illiteracy exists. Intergenerational literacy programs addressing this population must consider the native language literacy needs of the adults and children, and the need to educate immigrants regarding the California educational system, how it works, and how parents can contribute to their children's success at school.

The new recognition of the importance of parent education as one of the best "intervention programs" for childrens' achievement raises questions of how to structure a delivery system that serves both children and adults. Today, the federal Head Start program and California's Chapter 1 Compensatory Education and Early Childhood Development programs serve children, with parent "involvement" as a feature of the program. But the aim is not to

educate parents to new levels of literacy. Adult education programs, on the other hand, do not aim expressly at affecting the educational achievement of the adult's children.

Because of the importance of parental education to the ability of the school's to educate children, and given the fact that most adults, including a growing percentage of women are found in the workplace, there is a need for a delivery system of workplace education programs that can address the education of both adults (parents and parents-to-be) and children. This might involve the placement of Head Start-type programs in worksite child daycare centers that offer educational opportunities for both children and adults.

> **Recommendation 8: That the Legislature require at least 10 percent of the over $1.13 billion that is spent by the State Department of Education's Compensatory Education Office and the Early Child Development Division be redirected to establish programs offering basic skills education for the parents of children who qualify for these two programs; further, that the Legislature require that where child care programs are provided by employers, consideration be given by these programs to provide funding for parent education at work sites.**

Need For Professionalism and Research-Based Knowledge In Workforce Education And Training

Findings:

There is no systematic higher education and training to produce professional adult educators and trainers for non-college bound youth and adults, many of whom may suffer from serious learning disabilities.

A critical need exists for research on adult learning and how to develop curricula and teaching methods that address the widely diverse needs of California's adult learners in the workplace and other settings.

Discussion

There has been a growing awareness that enhancing the literacy of working age adults is essential if the nation is to successfully meet the economic challenges that it faces. Regional and national conferences are being held to discuss workplace literacy programs. Public agencies and community-based organizations are attempting to undertake programs to upgrade literacy in the workplace. While these efforts are well intentioned, there is a lack of knowledge and tools to provide competent adult education and training.

Unfortunately, little research-based knowledge exists to guide those who are interested in promoting basic skills education and training in the workplace. A substantial part of the problem lies in the fact that very little money is spent on applied research in education, and less still in adult education. Because formalized training exists to such a limited extent in business, there is little if any opportunity to apply and test research-based knowledge in the workplace.

Moreover, we lack an adequately trained cadre of professional educators and trainers who are equipped to provide adult education and training.[3] "We know that most of the nation's teaching force in adult education consists of school teachers working part-time and volunteers — neither of whom have extensive formal training in basic skills education for adults. It is not fair to be critical of this teaching force, because so little effort has been made to give them the results of research and experience in usable form and place it at their disposal." It is also hard to evaluate the teaching force, given how little we know about what works in the field (p. 6).[15]

In California, the lack of knowledge about how best to recruit, educate and evaluate adult education programs has been dramatically illustrated by the California Adult Student Assessment System (CASAS) project. The CASAS project was funded by the California Department of Education, Adult Education Unit to demonstrate the effectivness of competency-based education. Yet, data for six years of the project showed that, on the average, students entered adult basic education (not ESL) programs reading at the mid-sixth grade level and left after 80 to 120 hours reading at the mid-seventh grade level. Half dropped-out before completing a hundred hours of instruction.

That California's competency-based program, which has been designated as an exemplary method of instruction by the U. S. Department of Education, fails to make any more gain or to retain students any better than any other type of program illustrates the need for research on adult education delivery systems, teaching methods, learning skills, and curricula. This is of particular importance given the estimates by some that as many as 10 to 30 percent of adult literacy students may suffer from serious learning disabilities. [23]

The most commonly voiced need in the adult basic skills field is for more access to better information on how to deliver improved services (p.24). [15] Current research efforts are small and fragmented, there are few reliable and readily accessible sources of information about what is known, and testing instruments and other basic tools are far from satisfactory. One reason given is that there are only a few dozen recognized researchers that are addressing the problems of basic skills training for adults— many of them on a part-time basis. At most, a few million dollars per year are spent by government, industry, foundations and voluntary groups on research. There are no centers of excellence and few structured programs of investigation (p. 6). [15]

It is almost a certainty that a literacy bill will be passed out of Congress this year and signed by the President. The legislation would require a state plan for the creation of state or regional centers to (1) conduct basic and applied research on basic skills, instructional techniques, assessment tools and the use of technology; (2) act as a clearinghouse, provide technical assistance and training, and develop model programs; (3) conduct policy analysis, maintain a database and evaluation of progress on adult basic skills. Grants would be made to each state to fund such a center.

With or without the federal legislation and funding, it is essential that a center or centers be established in California to do all of the things specified in the legislation. It is also essential that California establish a postsecondary education program to provide for the development of a professional cadre of adult educators and trainers.

> **Recommendation 9: That the Legislature establish a network of field stations for action research on adult education in association with campuses of the California State University and Community College system, oriented to developing information about California's workforce skills needs, abilities of the non-college bound workforce, and the development of improved methods of education and training for non-college bound youth and adults; further that the Legislature require the California State University and Community College systems to establish a formal program to educate and train a cadre of adult educators who can work with the spectrum of education, language, and learning needs of California's undereducated youth and adults.**

It is envisioned that the program of professional education would work in close cooperation with the network of field stations in developing validated education and training curricula for professional adult educators.

Raising Awareness about the Literacy, Education, and Training Needs of Underserved, Non-College Bound Youth and Adults

> Finding:
>
> There is a general lack of awareness, knowledge and commitment among business, government and the general public in California regarding the problems of workforce literacy and the educational needs of non-college bound youth and adults.

Discussion

The issues and problems of workforce literacy have attracted a great deal of attention over the past decade. A host of studies and articles have been published, and television programs and movies shown to alert the nation to the growing crisis of illiteracy. Almost every week somewhere in the United States a conference is held on illiteracy. And yet, as noted in a paper prepared by Task Force member Ken Sutton, there continues to be lack of awareness and concern on the part of the general public in developing solutions to the problems of workforce illiteracy.[17]

Since 1983, the California Literacy Campaign, under the direction of State Librarian Gary Strong, has taken a leadership role in promoting literacy in California. Also taking a prominent role are California Literacy, Inc. (Laubach) and Literacy Volunteers of America The California Alliance for Literacy was founded to expand the awareness of the problems of illiteracy and about the delivery system that evolved in response to it.

A major effort at local coordination and promotion has been that of Project PLUS (Project Literacy U.S.). A high visibility program of national and local programming created by Capital Cities ABC/PBS in the fall of 1986 led to the formation of across the nation steering committees that included most of the public and private organizations interested in literacy. Some PLUS coordinating councils continue to function effectively as a referral source, and some others now work to coordinate regional publicity and fundraising and to develop relationships with businesses concerned with worker illiteracy (p. 52).[18]

Despite the growing attention being focussed on the problems of illiteracy and the efforts of providers to offer literacy services, a majority of the population in need of basic literacy skills is not being reached. Merrill Vargo, SRA Associates, testifying at the Legislative hearings in March 1989, said this population is notoriously difficult to recruit and serve. "They often have multiple problems, of which lack of literacy may be a cause, but rarely appears to be the most pressing, on a day-to-day basis; they have failed before in school settings and are not anxious to fail again; and they are also embarrassed by and anxious to hide their low skills." She said, "This latter is particularly true if they are employed, and this fact may be one of the largest barriers to dealing with the problem of illiteracy in the workplace. Often, the last person an adult illiterate wishes to discuss his problem with is his employer. People fear, and experience indicates that the fears are justified, that they will lose their jobs," Dr. Vargo added (p. 97).[19]

An SRA study of major California employers found that no more than five percent of the companies surveyed said they did anything themselves about basic skills in the workplace, or even that they would counsel or refer an employee to a literacy provider. [18] A survey of the 2900 member Personnel and Industrial Relations Association (PIRA) of Southern California, conducted by Dagmar Muthamia for the Task Force, found that, in response

to the question: Are applicants who have been rejected for basic skills deficiencies advised that they can get help by calling the literacy hotline?, only one respondent knew the number and has a referral program.[20]

As Dr. Vargo testified, "I think the entire society needs its awareness raised, and business needs to come right along with that" (p. 107).[19] But the current efforts, although commendable, will not be enough to raise the level of awareness needed to bring about significant progress in solving the problems of workforce literacy. Much could be done by the State to focus greater attention and response to this problem. For example, the influence of the Governor could be used to involve major business organizations, e.g. The California Business Roundtable, the California Chamber of Commerce and the California Manufacturers Association, to take an active role in workforce literacy. The Employment Development Department, in its quarterly newsletter to employers, could provide more information on literacy programs. The ten regional broadcasters in the state should be encouraged to recognize that they have a part to play in promoting an awareness and response to the problems of illiteracy.

> **<u>Recommendation 10</u>: That the Legislature andGovernor emphasize their commitment to workforce literacy by demonstrating leadership in promoting awareness of the personal and economic costs of the marginal literacy, poor education, and unmet training needs that limit the productivity of California's workforce.**

Footnotes

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[3] Forrest Chisman. (1990). *Leadership for Literacy* , San Francisco, CA: Jossey-Bass, p. 241.

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[5] Anthony Carnevale & Janet Johnston. (1989). *Training America, Strategies for the Nation*, Alexandria, VA: American Society for Training and Development, p. 49.

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[19] California State Senate. (1989, March). *Workforce Literacy: Growing Disparity Between Worker Skills and Employer Needs*. Sacramento, CA: Hearings of the Joint Committee on the State's Economy and Senate Select Committee on Small Business Enterprises.

[20] Dagmar Muthamia. (1990). *PIRA Literacy Survey*. Sacramento, CA: Paper prepared for the California Workforce Literacy Task Force.

[21] William Melendez. (1990). *Native Language Instruction: An Approach to Combat Illiteracy Among Language Minority Communities*. Sacramento, CA: Paper prepared for the California Workforce Literacy Task Force.

[22] Jean Sharley Taylor. (1990). T*echnology and Adult Literacy*. Sacramento, CA: Paper prepared for the California Workforce Literacy Task Force.

[23] Barbara Stratton. (1990). *Adult Illiteracy, Learning Disabilities/Dyslexia*. Sacramento, CA: Paper prepared for the California Workforce Literacy Task Force.

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